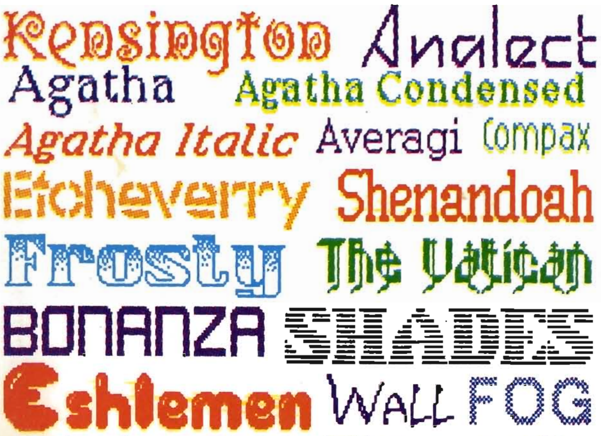
geoWorld

The definitive magazine about GEOS

Issue #20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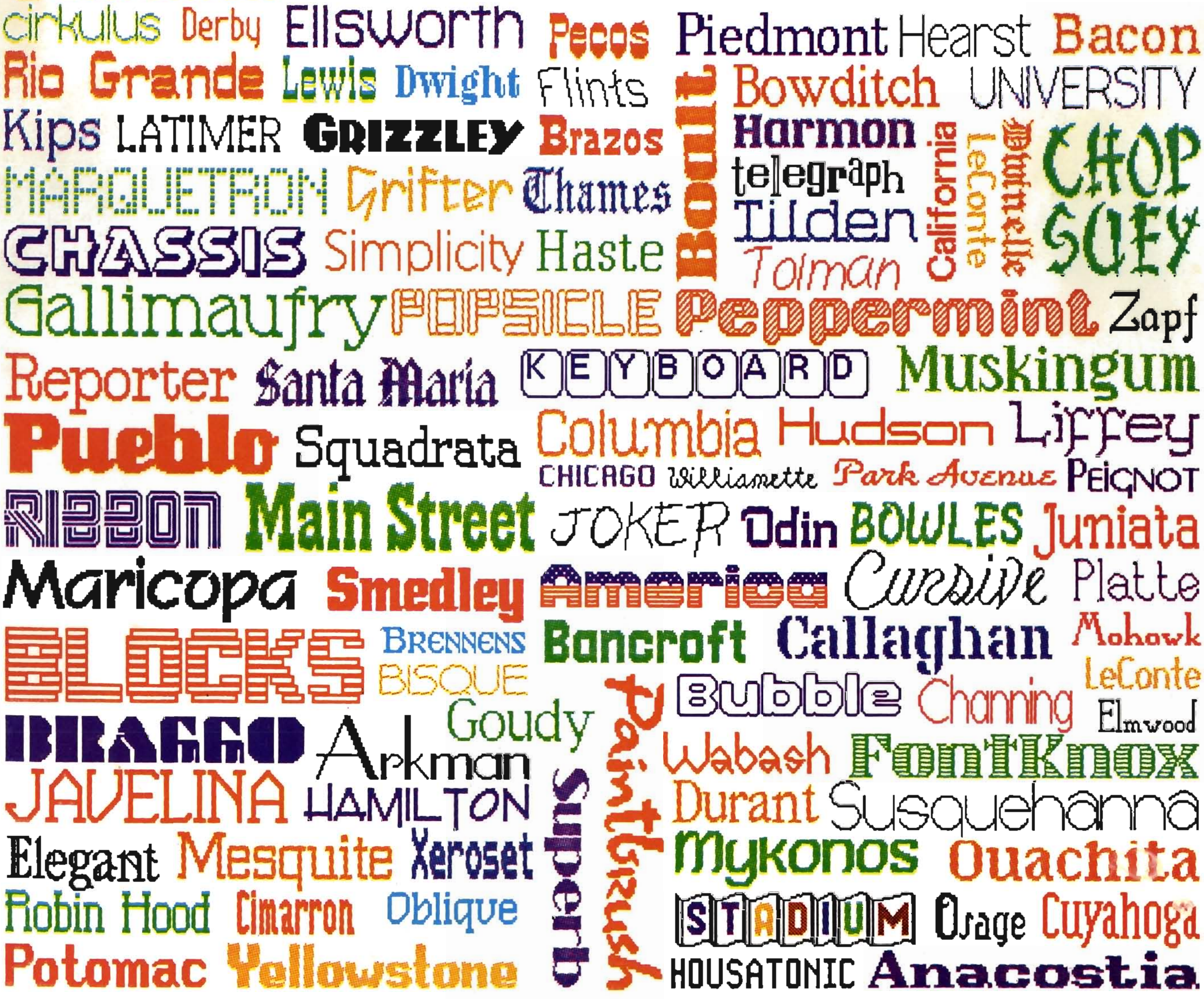
FONT ISSUE

GEOS FONTS: What Desktop Publishing Is All About

Bitmap Font Design
Font Utilities
Making Fonts Fit
Using MegaFonts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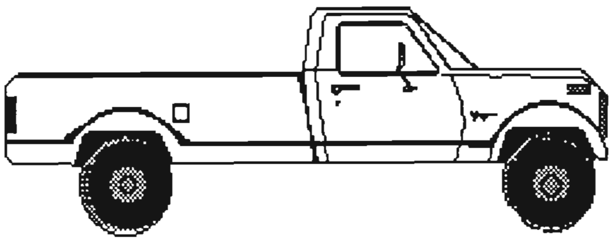

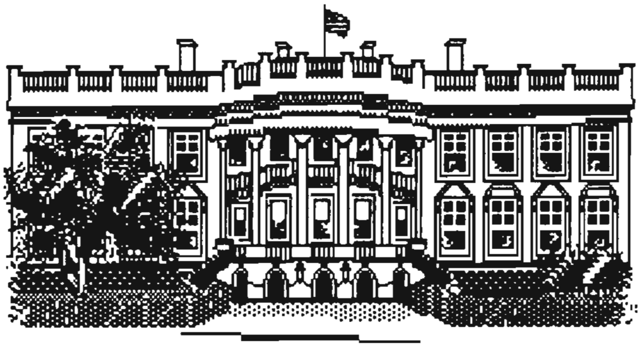

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GEOWORLD

The definitive magazine about GEOS

Issue Number 20

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Table of Contents

2 **GEOS Compatable** *James Stubbe*

3 **Letters to GEOWORLD**

5 **GEOS Fonts** *Susan Puhn-Lamb*

6 **Bitmap Font Design** *Susan Puhn-Lamb*

8 **GEOS Gems** *Peter T. Hughes*

9 **Making Fonts Fit** *Susan Puhn-Lamb*

10 **Using and Creating MegaFonts** *Susan Puhn-Lamb*

13 **GEOS Report** *Mike Ross*

17 **To Copy Protect or ?** *Dale Beach*

18 **BSW and the Future** *Marte Brengle*

21 **GEOS TURNS THREE** *Staci Glovsky*

23 **Inside GEOS** *William Coleman*

28 **Experiences with geoPublish** *Mike Hughes*

The Cover

GEOS fonts done with geoPaint by Susan Lamb. Imported to Amiga IFF using geoView by Art Dahm, 40 Adams Ave, Norwalk, CT 06851. Colored in 16 colors and color separated on an Amiga 500. Special thanks to Peter and Paul Hughes.

GEOS Compatible

Ram Expansion Unit secrets
By James Stubbe

Using a commodore Ram Expansion Unit (REU) with GEOS is like driving a sports car. Put her into third and watch that baby fly... No more disk drive spinning, no more napping while GEOS scrolls through a geoCalc or geoPaint document... just pure sports car performance on a computer that costs less than a used VW. There is no doubt that the REU is THE peripheral as far as using GEOS is concerned. Yes, even better than a fully functional 1581 disk drive. However, there is just one teensy little disadvantage.

The data in the REU is stored in RAM (random access memory). When the REU is used as a RAMdisk (to emulate a 1541 or 1571 disk drive) there is no automatic backup of the data in the REU. So, if the computer is turned off, the power to the computer is interrupted, or (dare I say it?), if a *SYSTEM ERROR* occurs, the precious data in the REU is lost forever. At least, that's what I *used* to think.

Not too long ago I was working on a very large paper for one of my engineering courses at the University of California, Santa Barbara. It was full of figures, equations and a whole lot of my valuable time. There I was, happily typing away when all of a sudden, ZAP! And no more response from geoWrite 128. The 80 column screen had locked up!

Now, I am pretty conscientous of backing up my REU data, but who has the patience to stop in the middle of a flash of inspiration to do a backup? (In other words, I had not backed up my work for some time.) So, there I was with a significant amount of work just sitting in the REU and no way of getting at it. With a shrug of total defeat, I did the only thing possible. I pulled out my BOOT disk, slipped it into the disk drive, then I reached around the right side of my Commodore 128 and pressed the reset button. GEOS booted in a flash (much to my surprise) and it took me less than a second to figure out that GEOS had rebooted from the REU and not from the disk! With crossed fingers, I switched from the external drive to the RAMdisk. All my hard work was there. What I had discovered was a back door, or an insurance policy, if you will, against data loss in the REU. Since then, I have discovered a few more tricks that REU owners might find useful and interesting.

SYSTEM ERROR RECOVERY

I guess the best place to start is with the GEOS SYSTEM ERROR. Ususally, such an error locks the entire system, essentially causing all data in the computer to be lost (including any information stored in the REU). The ususal recovery technique is to simply turn the computer off and start all over again. But if you have an REU and use the FAST RAM REBOOT option (selected in the configure application), there is a good chance you can recover the lost data in the REU.

On the Commodore 128 running GEOS 128, you can reboot from the REU simply by pressing the reset switch on the side of the C-128 near the on/off switch. This is the method I mentioned above. GEOS will reboot and unless damage has occured to the contents of the REU (I've had this happen only once), you should be able to recover everything that was in the REU at the time GEOS 128 crashed.

On the Commodore 64, things are not quite as simple. Remember, we are dealing with total loss of screen control. Since there is no way to exit directly to basic after a system crash, I recommend a neat little trick I discovered. Remember that the information in the REU is essentially lost, so this is desperation time at best. Try turning your C-64's on/off switch off then on VERY quickly (and I *mean* quickly). This will initialize the C-64 to BASIC mode, but hopefully, not affect the data in the REU. Next, load and run the REBOOT program which is one of two methods of fast rebooting from RAM on the C-64. The other way is hitting the restore key... in this case, after the C-64 has been turned off, the restore key wont work. With this technique, you have a better than 50/50 chance of recovering the data in the REU. It really does work1

If you are running GEOS 64 (version 1.3 or 2.0) on the C-128, you can use the rset button to get to Basic, but you must press the Commodore Key at the same time. This resets the C-128 in C-64 mode. If you forget to press the Commodore key and you end up in C-128 mode, there is still a way to get back to the RAMdisk. Type *GO 64* and answer *Y* to the question. When back in C-64 mode, and a disk with the RBOOT program in the drive, type: LOAD "RBOOT",8,1. If two real drives were on at the time of the crash, turn one off before loading RBOOT and reconfigure it after you are back in business.

There are other situations besides the SYSTEM ERROR where the above technique is useful. For instance, sometimes the computer will lock up from no apparent reason during printing or using other peripherals. Or, if there is a blink or a spike in the household current that temporarily causes a loss of power to the computer, you could use the techniques above to recover your data This may prove especially useful to people living in regions where thunderstorms are common. Let's face it, sometimes even a spike protector doesn't do the trick.

Note: these methods of REU recovery should be used with great care. Don't try them with the only copy of your stock portfolio in the REU. Also, the *only* foolproof way of protecting your data is to backup the RAMdisk data as often as possible.

RAM DISK AS THE ONLY DRIVE

Here is an interesting, if not terribly useful trick for GEOS 128. The configure application will not allow you to exit if you have turned off all physical disk drives, leaving the RAMdisk as the only operational drive. However, if you press the reset button after turning off the drives, GEOS 128 will reboot with the RAMdisk as the only drive. Just make sure you have a copy of the desktop and the configure application on the RAMdisk. The obvious advantage to this is that it would allow you to use GEOS without having your external drive powered up. This could be useful, for instance, if you are playing a long game like Circe or geoWar when you don't need to have the disk drive sitting there, heating up. Again, please be careful with this trick. Use it only when your REU data is not important.

Next time we will continue our discussion by considering how best to use the REU as a RAMdisk.

--James Stubbe
Send E-Mail to STUBBE

We welcome your input

Send us your comments, questions, suggestions, problems you need solved, or problems you've solved. We can't always answer all correspondence personally, but will share your valuable input with other GEOWORLD readers.

Write to: Susan Lamb,
East County 18th Street
Yuma, AZ 85365
Or, E-Mail *YumaLamb* on Q-Link

Letters to GEOWORLD

GEOWORLD Disk Problem

Please help me avoid a system crash which occurs when I use GEOWORLD Disk #1. When I call for a hard copy from within the "DUBL CLICK ME!" files on the disk, or use the geoDirPrint utility, I get a bad crash with a system error message. Please help me find a fix or a way to avoid this bug.

Michael Minnig
Carmichael, CA

Early versions of Disk #1 had files formatted with a beta copy of DocWright, the document-creation program by Joe Buckley and now available on the second RUN Power Pak Disk. Most of the information is not vital and can still be read on the screen. As for geoDirPrint, an upgrade with added features is included on Disk #2 (called GeoList 2.0).

Messy MegaFont question

On some of the MegaFonts, I get patches of unwanted pixels here and there in areas that are supposed to be clear. I've tried smoothing, but that doesn't help. I experience this with the Mega Cal font, running at 48 points, plain and italicized.

JDEE
QuantumLink

For some reason, some of the letters of the BSW megaFonts have stray pixels. They can be cleaned up with a font editor. Use one of the Jim Collette editors (geoFont doesn't like the megas) and be sure to re-save the file to the same dummy point size as was opened. Refer to the megaFont article in this issue. --Ed

---

Font point sizes in geoPublish

GeoPublish gives so much flexibility in font sizes, but the manual doesn't give any specifics about "blowing up" the size. Which point increments yield the best results? For example, if Dwinelle is 18 points, should it be increased in multiples of 18? The problem: results are not predictable, and time is consumed by zooming in on the resultant size changes. Any comments would be appreciated.

MichaelK52
QuantumLink

You are on the right track in that the best enlargement is in multiples of the original point size. An 18 point font can be proportionally enlarged to 36, 54, 72, 90, 108 and so on. With each larger increment, the pixel effect is more pronounced, but at least all elements of the characters are equal to those of the original size. Smoothing is not recommended on complex fonts such as Dwinelle that have thin diagonal lines. Always "set" type in zoom display to observe the effect of enlargement and reduction. - Ed

---

More font problems

After using geoPublish awhile, I noticed that I couldn't use certain fonts with it. They don't show up correctly in the fonts menu of the attributes box. If I have FONTKNOX, BUBBLE or SUPERB on the disk, their names don't appear, but the name of a different font appears more than once. For example, if I have ORMAND, BUBBLE and FONTKNOX on the work disk, ORMAND, ORMAND, ORMAND and BSW appear when I click through the fonts menu. The only way I can get FONTKNOX to even appear in the menu is to put it it last among the seven fonts. Then, if I try to use it, the screen freezes up.

Michael Myers
Beardstown, IL

This is the letter that prompted the "Making Fonts Fit" article on page 9. Other than using megaFonts, this is currently the only solution for this problem. - Ed

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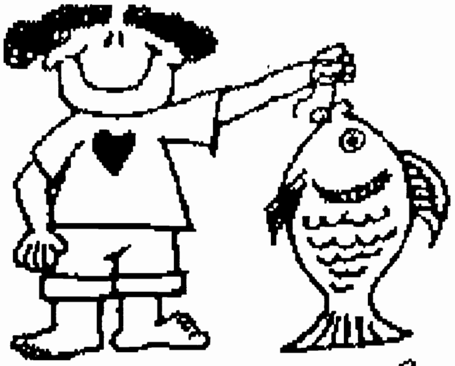
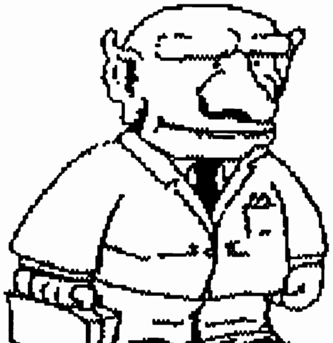
NEXT MONTH IN GEOWORLD

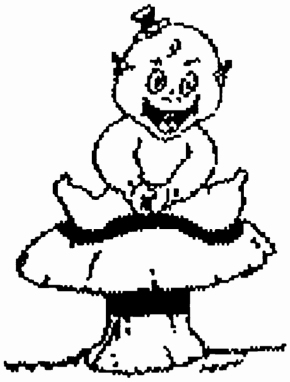
Next issue will feature GEOS graphics - both bitmap and object-oriented. Learn how to size graphics and adapt clip art to your projects.

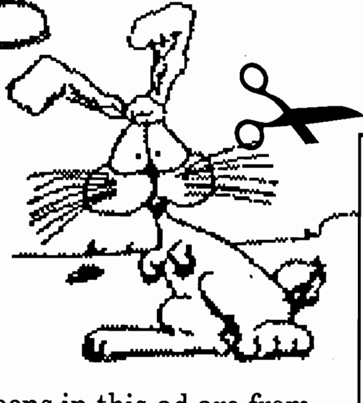
New Discovery:

Cartoons That Defy The Law Of Gravity!









All of the 'toons in this ad are from the May-Jun disk of cartoons.

There's nothing **GRAVE** about these 'toons! They're full of fun for you and your GEOS/C-64!

It doesn't take an Einstein to see that GEOS adds tremendous power to your C-64. But no one said all that power had to be serious ALL the time!

With these 'toons, you can add a nice little *zip* to your documents, whether they be geoWrite, -Paint, -File or -Publish!

If you can part with six bucks, you can have the most current disk. A new one comes out every two months, and includes around fifty drawings, a brand new font, plus a newsletter on disk.

Just use the handy order form below. Or, if you don't want to cut up this really great magazine, take a photocopy, and send that. Or you can send your check or money order along with your name and address on a scrap of paper. Heck, I don't care. I just want the money!

So release yourself from all that gravity and try a 'toon or two. You never know. You might even find a new dimension to yourself.

Relatively speaking, of course.

You betcha! I'd love to have the latest disk of 'toons for my Commodore and GEOS!
Here's my six bucks, my name and my address:

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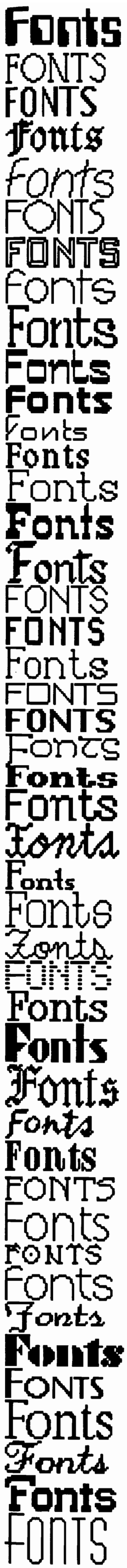

GEOS FONTS: What Desktop Publishing Is All About

By Susan Puhn-Lamb

Printed documents composed with computer software are what desktop publishing is all about. This activity is not really new, nor limited to computer technology. For many decades, offices, schools, churches and small businesses have used typewriters, mimeograph machines and photocopy machines to put information into readable form.

Using a computer to "typeset" the document is an effective way to upgrade from a bland typewritten page to something more interesting and appealing to read. Fonts are what the computer uses to present your words in readable, and professional-looking form.

Characters typed with a typewriter are "fixed width", with a skinny, lower case i or l as wide as a capital M or W. The characters printed by a dot matrix printer's resident fonts are also fixed width. Therefore, using most word processors with a dot matrix printer may be just a step above using a typewriter. Even printing in NLQ (Near Letter Quality) mode leaves you with squished m's and stretched-out i's.

GEOS uses bitmap fonts so that the characters and their spacing can be seen on the screen the way they will be printed on a dot matrix printer. Using a laser printer gives you much better output thanwhat you see on the screen. Since most people using GEOS aren't using laser printers yet, we'll stick to bitmap fonts in this issue.

The advantage of using bitmap fonts is that they are "proportional width". Each letter, number or punctuation mark is only as wide as a well-formed character need be. With the addition of one or two pixel spaces between them, they are all different widths. When a lot of text is typed out with proportional fonts, it looks and reads better.

Another advantage of GEOS fonts is variety. A document may use a modern, high-tech typeface, an Old English style or even a cursive script. They come in a number of different sizes and can be further enlarged with geoPublish.

Since I was one of the first buyers of GEOS, I received a free copy of the Font Pack. This collection greatly enhanced the selection at my disposal. As wonderful as the fonts were, many of them needed "fixing". Some letters weren't well-formed and the spacing in words often came out awkward. I longed for a font-editing program, something that Macintosh desktop publishers had available for some time. I mistakenly thought that BSW had one they were using to create their fonts.

I finally discovered a small company called "Myth Conceptions" that was selling a GEOS font editor along with a pattern editor. This gave me just the tools I needed to tailor existing fonts and create new fonts for my particular needs. The programmer, Art Dahm III, later sold his *geoFont* editor to BSW and soon fonts were everywhere.

There are probably as many bad fonts as good ones, many being a re-worked existing font with minor changes. Building a good personal library may require learning some editing techniques.

I have so many fonts by so many different designers that I couldn't mention them all here. We are going to try and put as many as we can on the GEOWORLD disks and there are several collections for sale. One of the first people to sell disks with a large variety of fonts is TT grafix (Tom Trevarrow). He also has done several of the fonts included on the *RUN Magazine* GEOS Power Pak disks.

Another talented font designer who creates commercial-looking fonts is Howard Fernald. He sells his font disks through *Mystic Jim.* His latest collection, "Letter Images" includes a wonderful border font for creative effects. His "Agatha" font comes in condensed and true italic versions as well as a greek alphabet and decorative initials.

There are no less than 33 fonts on the disk with Jim Collette's new font editor. Created by Bruce Gilson, they are named after rivers. They are selling the disk under the name Comm-Plex Software. Brody Koga has contributed a number of good fonts to Q-Link and GEOWORLD. He also now has a disk of fonts he's selling for $6.00. I know there are many more fonts worthy of mention, but I have just not seen them.

With greatly improved printer drivers, output with bitmap fonts from fairly inexpensive dot matrix printers is looking better and better. Some work and attention to detail will allow the GEOS desktop publisher achieve results that rival the high-priced systems.

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R.D. #5
Malvern, PA 19355-9657

Mystic Jim
2388 Grape
Denver, CO 80207

Comm-Plex Software
6782 Junction Road
Pavilion, New York
14525-9755

Brody Koga
3251 S. 176th #5
Seattle, WA 98188

Font Editor

Bitmap Font Design

Now faster and easier with a new font editor

By Susan Puhn-Lamb

When GEOS first came out, the two most exciting capabilities were the ability to incorporate graphics with text and "setting" that text in a variety of fonts. Not only a variety of type styles (bold, italic, outline, reverse, etc.), but of size as well. With the release of geoFont considerable flexibility for producing good-looking documents was realized. There have been other font editors around, but none to surpass geoFont til now.

Another font editor was created by a very young Jim Collette and uploaded to Q-Link. At the time he was 13, which is mind-boggling to this non-programmer. He refined his editor to version 2.2 which won 3rd place in the BSW programming contest. Now Jim has released version 2.4 of his editor for sale with a two-sided disk of fonts. The 33 fonts are by Bruce Gilson and give the user a large variety of styles and sizes. Even without the fonts, the price of the disk is worth it (if you take using fonts seriously) just to get the editor.

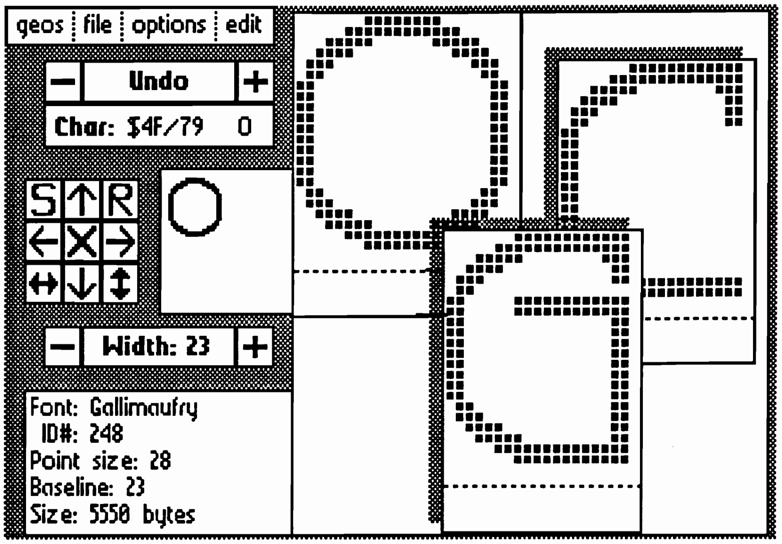
Font Editor 2.4 has all the features of geoFont with important additions:

1. Photo scrap support. This means you can design letters in geoPaint and paste them in the appropriate place. I have digitized sheets of complicated typefaces with *Computereyes* for accurate construction of the letters. Sections of geoPaint borders or other clip art can be pasted to font characters also.

2. Stash and retrieve buffer. This is a real time-saver. Draw an O, stash to the buffer and retrieve at the C or G locations. This gives you the basic structure of the letters which can then be altered with minor changes.

3. Horizontal and vertical flipping. Another time saver when used with the buffer. Have you noticed how a lower case n looks like an upside down and flipped u? Flip a lower case b to d to p to q and so on. Some adjustments may be necessary after flipping, stashing and retrieving, but the basic letter has been quickly drawn once for several characters.

Use the Stash and Retrieve buffer to copy one letter to another and make changes. An O is drawn, stashed and retrieved at C and G locations.



Char: $4F/79 0

Font: Gallimaufry
ID#: 248
Point size: 28
Baseline: 23
Size: 5550 bytes

nu bd pq

4. Reverse characters. Instantly turn a black on white letter to a white letter on black background. A reverse alphabet can be effective when constructed properly. Leave a black line on the top of the letters and make a plain black one-pixel space for between characters.

5. Preview option. Print out the font as you work to see how the alphabet is looking. If a letter isn't compatible with the majority, you will notice it right away. Print in plain, bold, italic, outline or reverse without exiting to use geoWrite. The alpabet also prints to the screen for another view.

6. Font Grabber. This is a handy option to convert standard Commodore fonts as well as from other programs to GEOS format. If you use a lot of small fonts, there are many that have been created with other programs.

7. Font scaling utility. This part of the editor was created by Bruce Gilson and is quite amazing. Take an existing font and scale it to other sizes. Any time you enlarge or reduce a bitmap image, there is distortion, so expect to do some touch-up. This feature takes practice as there are several variables to set, such as point size, width and threshold. It's a good idea to jot down the variables when you first set them since changes may be necessary. The scaling takes a long time as each character is figured out. Be careful when creating a very large font this way as it will end up too large for the applications.

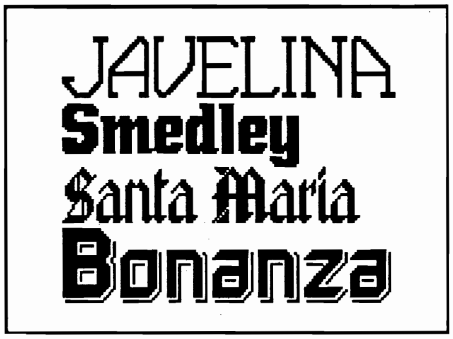
It is also possible to scale one character at a time, although the point size must remain the same. This is a good way to take a normal font and make condensed and expanded versions by changing the width. When a letter doesn't look quite right, click "undo" and try a different width.

8. One feature that I particularly appreciate is the ability to change the point size of an existing font. You can create new alphabets with little effort. Size is added or subtracted from the bottom, so be sure to move each letter up before reducing.

This is also helpful if you want to adjust spacing between lines of type. By changing the point size, extra white space can be shaved from the bottom, giving a page of text tighter spacing. I had created a font with each character using the whole length of point size. Text printed with the lines too close together and didn't read well. By changing the point size from 12 to 14, I was able to add those two pixels of white space and saved the font.

Font Editor 2.4 has many more features that will become apparent when you use it. It does not save your work automatically like geoFont, so you have several saving options. One possibility is to use dummy point sizes, which lets you have quite a few same-size fonts saved to one name. This means you can have many more different fonts available than the seven allowed at a time. The Chameleon font by Brody Koga is done that way.

I wont give the step-by-step instructions here for using this font editor as it comes with very good instructions. The most important advice I can give is to be consistent throughout the alphabet. I have seen so many fonts where the letters don't have any relationship to one another. Use vertical or horizontal lines that are the same width throughout. You will have more satisfactory results if you create letters that use straight lines and true diagonals. This way you can take advantage of the pixel effect instead of trying to fight it. An O drawn like a box with rounded corners looks much better in bitmap format than a circle.



The four fonts above are examples that make the most of the pixel effect. Surprisingly, they are taken from regular typefaces and not designed for computer use. I have found many ideas like these in type books, studying the various typefaces to determine which ones would be appropriate for bitmap construction.

Javelina is an example of an all-caps font that has several alternate letters such as the A, U, V, W, M and N. At the time I created the font, Font Editor 2.4 with flipping wasn't available, so the alternate letters had be individually drawn.

I always position the character to the left and then add one or two pixel spaces to the right, depending on the size of the letter. I usually don't leave more than a pixel between letters and create a one pixel space (at the up-arrow location) to use where the spacing is too tight. You can always add space this way, but if your font has too much space between letters, you're stuck.

Designing your own fonts is one of the more enjoyable and rewarding activities possible with GEOS.

WHAT'S IN A NAME?

Someone on Q-Link complained that many fonts had made-up names that weren't descriptive of the form or gave credit to the original designer of a commercial typeface from which it is taken.

If a font designer is going to produce his or her versions of existing typefaces, naming them can become a problem. If we all have the attitude of the message writer, there would be much too much duplication of names. I can only name one font after myself.

The nature of bitmap fonts makes it impossible to exactly duplicate a letterpress typeface anyway, so (in my opinion), a new name is in order.

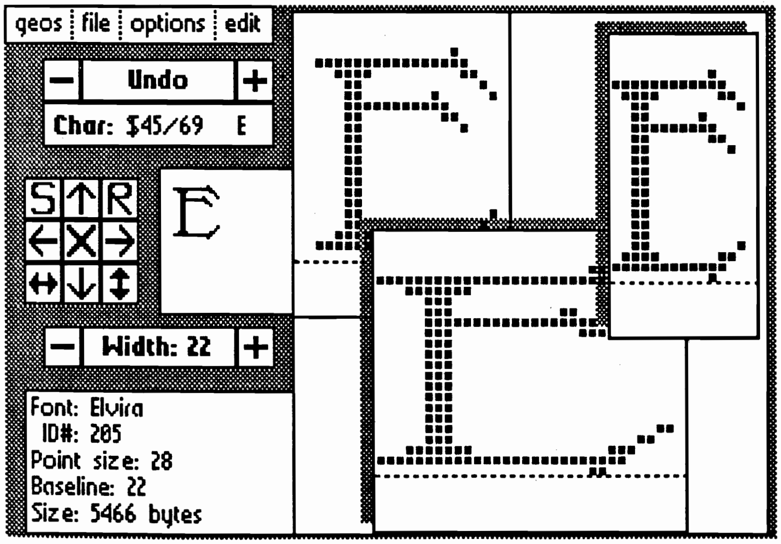
Berkeley Softworks started the ball rolling by naming their fonts in the first font pak after streets in Berkeley. Others are descriptive, such as *Bubble* and *Stadium*.

Although most of my font names are descriptive, I named the 12 on the *RUN* Power Pak disk after streets in Yuma. I studied a street map until I found names that seemed to fit the style of letters. Bruce Gilson named his fonts after rivers. You could name them after family members, friends, pets, flowers, -- any number of people and things.

I prefer descriptive names which can also be creative. An Art Deco style alphabet could be named *Bauhaus*, and an Art Nouveau style, *Tiffany*. A font that is reminiscent of mexican style might be named *Tijuana*, *Burrito*, or *Sombrero*. Indian style could be *Navaho* or *Wigwam*.

It's not really so important how you arrive at the name as long as it is personal and you feel it fits. If your font is well-designed and comes into popular use, the name will bring the image of what you've created to mind. Then, future font designers will copy and name their creations after your work.

--Susan Puhn-Lamb



Char: $45/69 E

Width: 22

Font: Elvira
ID#: 285
Point size: 28
Baseline: 22
Size: 5466 bytes

Change the width of individual characters with the scaling option.

Condensed or extended versions of existing fonts can be created.

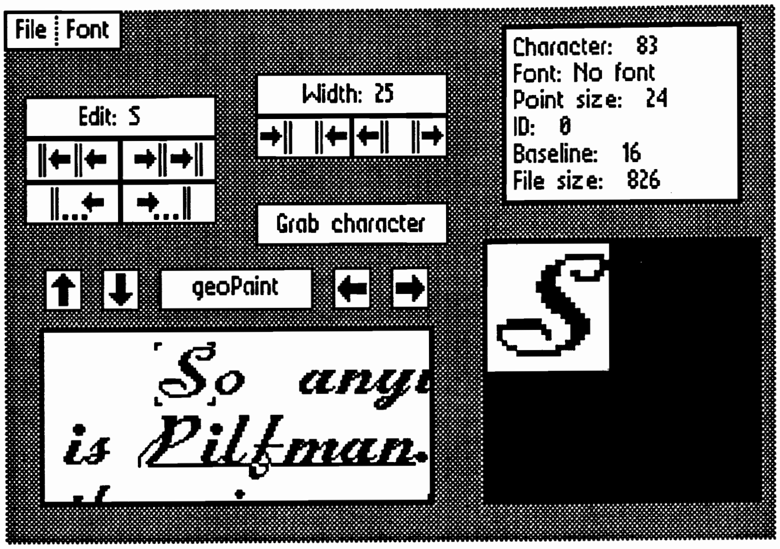
GEOS GEMS - Invaluable Utilities for GEOS

By Peter T. Hughes

Font Utilities

Font Monster

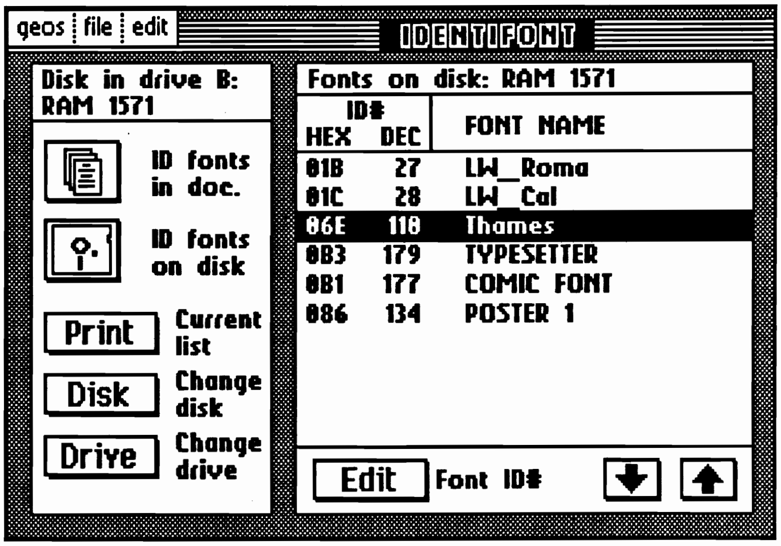
Did you ever want to create a font using the excellent graphic tools of GeoPaint such as freehand draw, pixel edit, flip, line, box, circle, patterns, scaling and smoothing? You could do this with some of the other font editors by tediously copying and pasting each letter into a photo album and then copying and pasting each letter back into a font. Did you want to easily convert a Macintosh font into a GEOS font by grabbing the font that was typed onto a MacPaint, which was converted to a GeoPaint file, directly into a font? Now you can create and alter fonts with FONT MONSTER by Joe Buckley. Font Monster lets you view and scroll a GeoPaint file in a window. With the mouse or keyboard one can easily grab each letter with a bracket pointer. The program can auto-increment to the next letter in the alphabet to speed up input. You can edit the Font ID. There are numerous keyboard shortcuts.



Character: 83
Font: No font
Point size: 24
ID: 0
Baseline: 16
File size: 826

Identifont 3.2

Identifont 3.2 by Dennis N. Seitz is a utility that you can use to find what identity number a font has that distinguishes it from other fonts. You can list a font's identity number in decimal or hexidecimal as well as its name if it is listed in the programs chart of fonts. Otherwise it will only list the id number. This program will list the fonts in a document so you can see what fonts were used. This is nice when someone else gives you the document. The text will appear in only the BSW font if you did not have the correct fonts on the disk with the document. This program will also list all the fonts that are on a disk; so you can see what fonts are available before entering geoWrite. You can also edit the id number of a font if it is the same as another font. The current list can be printed or saved as a text scrap for later editing and storing in a geoWrite document.



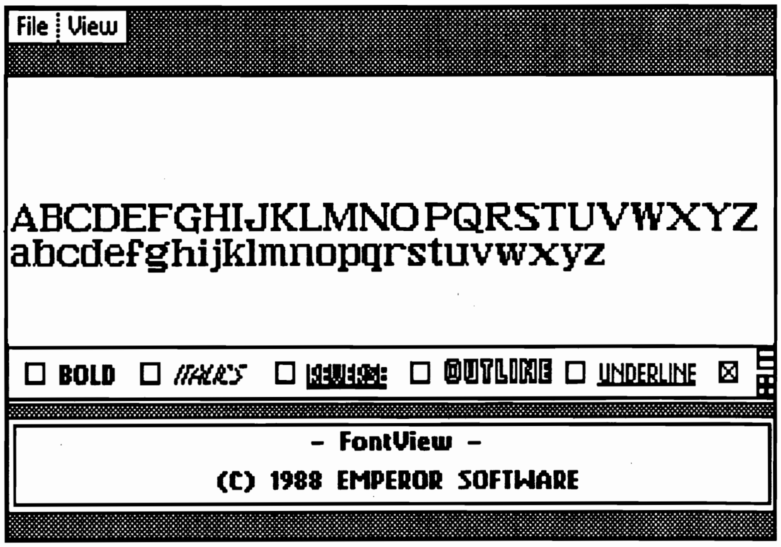
Disk in drive B:
RAM 1571

Fonts on disk: RAM 1571

ID# HEX	ID# DEC	FONT NAME
01B	27	LW_Roma
01C	28	LW_Cal
06E	118	Thames
0B3	179	TYPESETTER
0B1	177	COMIC FONT
086	134	POSTER 1

FontView 1.0

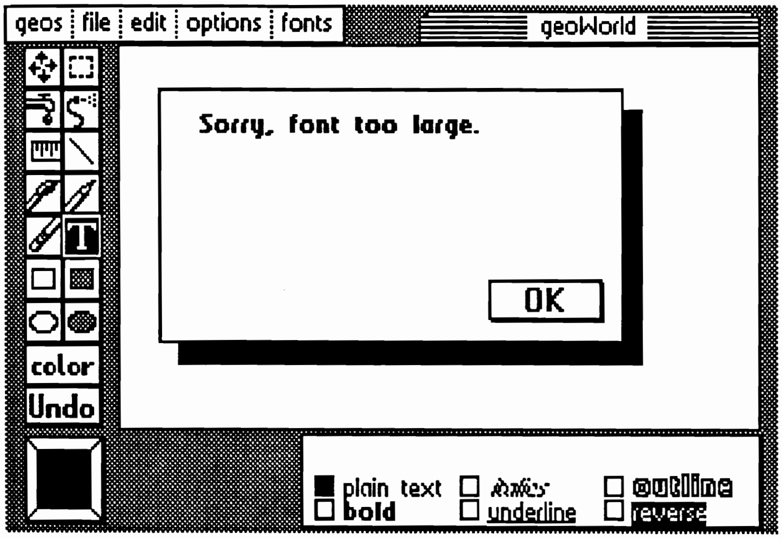
FontView is a shareware program by Christopher Flynn. This program allows you to view a Geos font on the screen. With the great many fonts available and the peculiar names that are used for the fonts it is easy to forget what a particular font looks like. Without this program one would have to load up geoWrite and type out the whole font. This small program types out the font for you. This program even does more than that. With FontView you can display the multiple point sizes of a font as well as display the font in different styles such as bold, italics, reverse, outline and underline or in any combination. It only types the upper and lowercase letters and not the numbers or symbols. It would be nice if it printed the font to a printer for making quick reference charts. But this program is very handy even though it can be improved on a little.



ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

☐ BOLD ☐ ITALICS ☐ REVERSE ☐ OUTLINE ☐ UNDERLINE ☒

- FontView -
(C) 1988 EMPEROR SOFTWARE



Sorry, font too large.

Making Fonts Fit

How to tailor your fonts for use in any application.

By Susan Puhn-Lamb

"Sorry, font too large." The first time I encountered the dreadful message was when using geoPaint. What good was having or creating a large font if it couldn't be used? This happened way before the Paint Drivers were released so I could "set" type with large fonts in geoWrite and convert the page to geoPaint format. The manual had no reference to what made a font "too large" and why this condition afflicted some 24 or 30 point fonts, yet some 48 point fonts would fit.

Many users assumed it was the point size that determined whether a font would fit or not. Through trial and error, the size limitations of fonts was discovered by those creating them with geoFont. Come to find out, it is the total number of bytes in a file that allows it to be used by a particular application. The best solution for larger fonts was to break them up into two or three different point sizes or several files of the same size. They could be used this way in geoWrite by switching back and forth between the files. In geoPaint, only one font in only one point size can be used in a text box. It was a time-consuming process, but one could set the characters needed and then move them around into a headline.

When GEOS 128 was released, I thought the larger memory would allow for a larger "font buffer". Instead, the 128 version of geoPaint accomodated even less in terms of font byte-size. Finally, geoPublish was released with the smallest font buffer of all the applications. At least this program introduced megaFonts, but there were only three available and no way to edit them or make more. The final blow was the release of GEOS 2.0 (both versions). With smaller font buffers again, many of BSW's own fonts from FontPack+ couldn't be used in geoPaint or geoPublish.

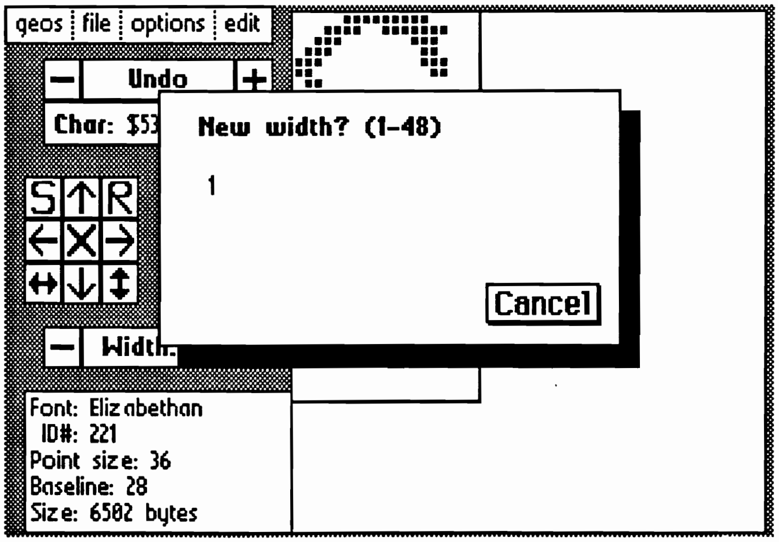
Now, there are a couple of ways to get around the font buffer limitations. For use in geoPaint or to create a bitmap of a headline for geoPublish, the Paint Drivers are available.

Other than converting all large fonts to megaFont format, the best solution is to edit a copy of a too-large font to fit the application used for a particular project. With a font editor, merely eliminate un-needed characters until the total number of bytes is under the limit for the application you're using. Rather than just erasing the unwanted characters, they must have the width reduced to one or two pixels. The height, or point size is pre-set, so eliminating size there isn't possible. However, if you have a font with extra white space at the bottom throughout, the point size can be made smaller with Font Editor 2.4

First determine the maximum bytes you can have for the application you're using. Always work on a copy of the font. Say you are using "Elizabethan" and want to set a large headline in geoPaint. It is a whopping 7906 bytes since the file contains upper and lower case, all numbers and punctuation. Simply eliminate the width on characters you know you wont be using until the file is under about 4100 bytes.

The approximate byte limits on the applications are: geoWrite (both 64 & 128) - under 6000; 64 geoPaint -under 4100; 128 geoPaint - under 4500 and geoPublish - about 4096.

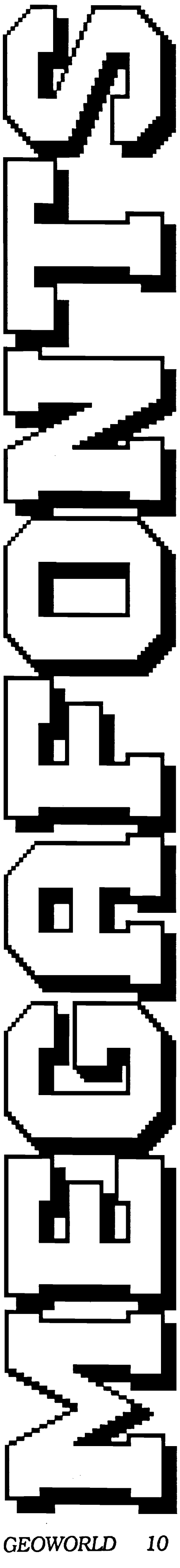
Decrease the width of unneeded characters to lower the byte size of large fonts.



New width? (1-48)

1

Font: Elizabethan
ID#: 221
Point size: 36
Baseline: 28
Size: 6502 bytes



Using and Creating MegaFonts

Now you can have big headlines without that big-pixel effect

By Susan Puhn-Lamb

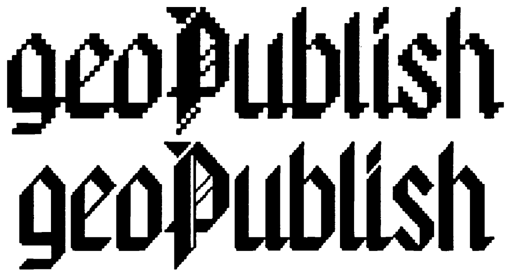
A megaFont is an amazing tool created for an amazing program. It's not so much what it does, which is to provide large type for headlines, but the way geoPublish uses megaFonts.

As most of you have discovered, geoPublish wont recognize a font larger than 4096 total bytes. It either wont show up at all on the font list or the text will come out in BSW or another font on the disk. When creating a font larger than 24 points (with all the characters), it doesn't take long to reach the 4096 limit.

Although "Making Fonts Fit" (on page 9) explains how to edit existing fonts to use with geoPublish, the best solution is the megaFont format. A megaFont is constructed differently from a regular font of say, 10, 12, 14, 16, 18 and 24 points. In the case of regular fonts, the point size refers to the actual number of pixels in the height of the characters, including any blank pixels at the top or bottom.

A megaFont is created in sections (usually 48 point size) and then saved to *dummy* point sizes. When you use the font in geoWrite, you must select each of these different sizes to type the characters in that section. GeoPublish selects the dummy sizes automatically. That's why several letters might show up quickly on the screen and then there is some hesitation while the program shifts to another section.

The importance of using megaFonts for headlines can be shown with the following example. The top word is typed with a 24 point font and enlarged to 48 points. Beneath it is the same word typed with a 48 point megaFont. The differences are even more extreme with a more cursive typeface.



Although megaFonts look best set at the 48 point size that they are produced, a pretty good enlargement can be made at 96 points. The word MEGAFONTS up the left side here is an example of that setting.

The geoPublish manual tutorial suggests setting a headline with LW Roma in 48 points. Since this font is a maximum 24 points, you will get results worse than the top line. Had the instructions been to set it in 48 point Mega Roma, "The Jelly Roll" newsletter would have looked a lot better. There are only 3 BSW megaFonts and they aren't very good. Maybe that is why the manual doesn't mention them. The GEOS 2.0 manual barely mentions megas by stating that geoPaint doesn't support them.

Creating a megaFont with Font Editor 2.4 is a bit complicated, but possible. It's a matter of keeping track as to which characters go in which file and saving them to the proper dummy point size within the font. To be used by geoPublish, the characters must be in these locations:

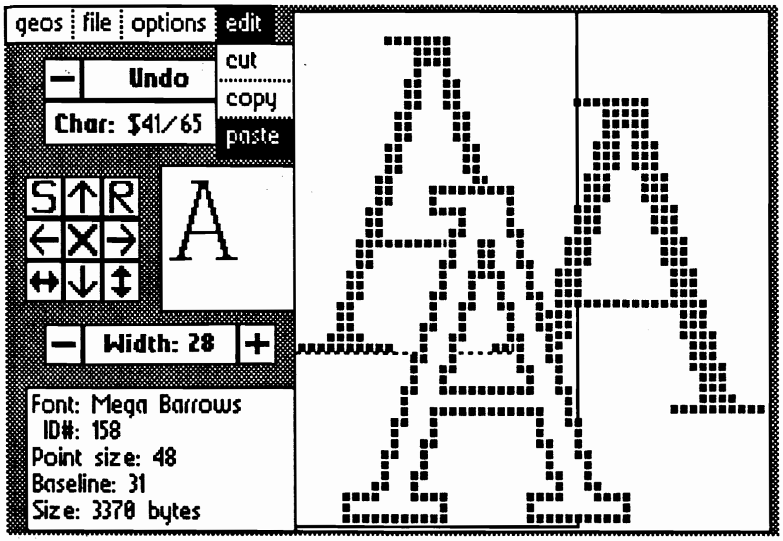
48 point - space ! " # $ % & ' ( ) * + , - . /
49 point - 0123456789 : ; < = > ?
50 point - ABCDEFGHIJKLMNO @
51 point - PQRSTUVWXYZ [\ ] ^
52 point - abcdefghijklmno
53 point - pqrstuvwxyz } | ~
54 point - garbage

There are a couple of extra characters, but I can't type them here as they are keyboard commands.

I have found three basic ways to work: Editing an existing font, converting a fairly large font to the new format and creating one from scratch.

Editing an available megaFont is the easiest and quickest way, but there aren't that many available to work with. GeoPublish has Roma, Cal and Barrows which need to be cleaned up anyway, so a good place to start. When you first open the font, it lists the seven files. By choosing 50, you can start with the capital A. The top of the next page shows a Mega Barrows A and a couple of ways you might change it to make a new alphabet. These variations were created by typing A's in geoPaint (50 pt. file) and using bold and outline styles. They were then tightly cut and pasted into the font. You could also vary the font by making thicker serifs or putting a frame around each letter.

After you've edited each character in the 50 point file it must be saved back to the Barrows font. This is where you must be careful. Since the file is actually 48 points high, the program will present this as the size to be saved. You must change the 48 to 50, or the current file will



Char: $41/65

Width: 28

Font: Mega Barrows
ID#: 158
Point size: 48
Baseline: 31
Size: 3370 bytes

To quickly create a new megaFont from an existing one, change the style in geoPaint and paste the new version in place

overwrite the dummy 48 point file reserved for punctuation. Follow this procedure for each section, or file Each time you save, change 48 to the appropriate number except when you are editing the file reserved for the 48 point characters. Leave the 54 point file alone. I have tried to leave it out of the font, but then it doesn't always operate correctly.

The megaFonts that come with geoPublish have some stray pixels and need to be cleaned up. Besides the geoPublish megas, the only others I know of which you can use for practice are the two on GEOWORLD disk #1 and those on my own Headline Font disk, sold under *Lamb Art and Design.*

I've recently converted all my headline fonts to megaFont format, which is the second method for creating them. Here is how to convert a file that consists of capitals and numbers in File 1 and lower case and punctuation in File 2: Open File 2 and eliminate all the characters except those that belong in the 48 point file. The fastest way is to click the width bar and indicate 1. At the save option, choose *create* and name the new file, saving it at 48 points.

Close and re-open File 2. Since you didn't save to it, the file will be back to it's original form. This time, eliminate all of the characters except lower case a through o. The save option will indicate the actual size again, so change it to 52 and save to the new megaFont. Do this again for the rest of the lower case letters and save to 53 points.

Do the same thing to File 1, each time keeping only the characters you need and eliminating the rest in the font. Make sure the total bytes in any one file are less than 4096 so geoPublish will use the font.

Most of the large fonts I converted were around 46 or 47 points and I kept them at that size instead of changing to 48. I also successfully converted 36 and 40 point fonts. For best results, use 48 point as the setting in geoPublish regardless of the actual size. Setting other sizes may work, but might be too distorted.

The final way to work is from scratch. Drawing every character in the editor can take a long time with a larger font, so you might want to design your alphabet in geoPaint to start, cut the characters and store in a photo album. The photo manager can be used from within Font Editor 2.4, which saves time.

When you indicate *create* a new font, set the size at 48 points and *default width* at one. That way, you wont have any more bytes than necessary. You only need to worry about creating the characters for the file you're working on. As with any font, you don't have to create a character for every location in the file -- just save what you want.

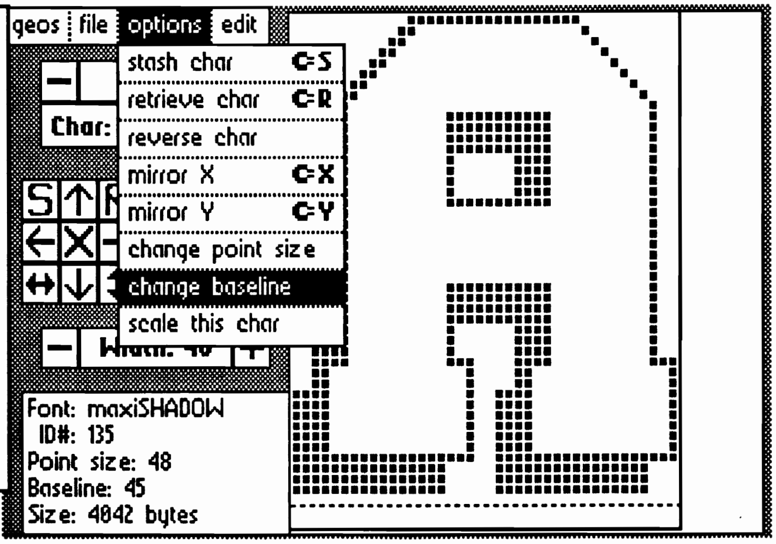
Create the 54 point garbage file by opening a working megaFont to that file and save it to your new font.

This procedure is still experimental and hasn't always worked well. Sometimes the geoPublish text box shrinks in size and the attributes box lists the wrong fonts. The important thing is that it's possible to make megaFonts which can vastly improve your newsletter or flyer. In future issues I'll outline any more problems I encounter and how I've worked them out.

--Susan Puhn-Lamb

Watch that baseline!

Besides being the location for the underline, the baseline also lines up different font files regardless of point size. If you want a 12 pt. font to end up on the same line as a 24 pt., place the baseline one or two pixels below the bottom of the letter. This is even more important when making a megaFont so that different letters in the same alphabet line up. Since each section is created as a seperate font, establish the same location for each one. The editor will ask for the baseline when first opening, or you can change it later.

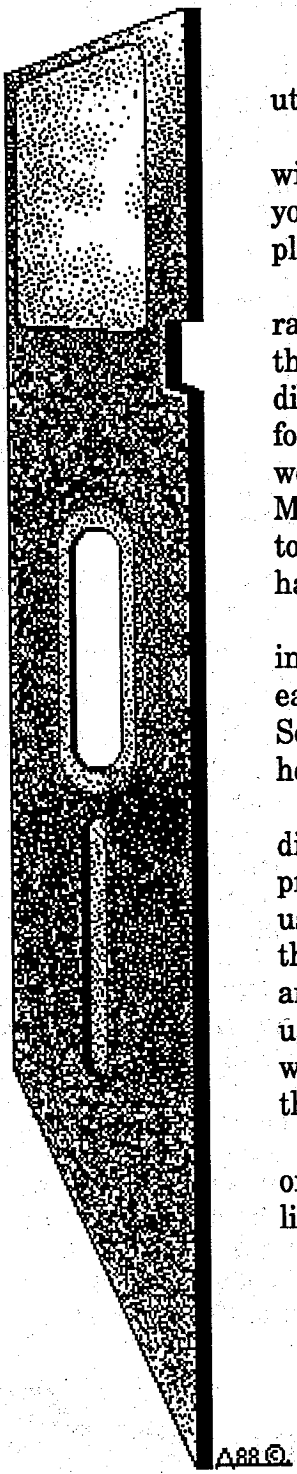


Font: maxiSHADOW
ID#: 135
Point size: 48
Baseline: 45
Size: 4042 bytes

Announcing GEOWORLD Disk #3

GEOWORLD Disk #3 was held up due to some great new programs which have been uploaded to Q-Link this past month. We wanted to put as many on the disk as possible which required testing and compiling documentation.

There are programs which can be used instead of the desktop to go from one application to another and identify many files at a glance. View 64 files at a time with John Howard's *Quik Top* and *WormDesk* by Payton Snider displays files by category. One or more of these can be included on all your work disks as they only use a little bit of memory, especially when compared to the desktop. There is a collection of great programs by Nick Vrtis, including *Labeler*, *Loader-Maker*, *Combiner* and *GetGraphic*. His *BigClipper* , quickly cuts oversize photo scraps and *Paint-Scrap* by Dennis Seitz will cut a full geoPaint page to a scrap. Good news for geoPublish users is *Retriever* by Ed Flinn. His program retrieves all the bitmap graphics from geoWrite or geoPublish documents and files them in a photo album. This is especially invaluable when reformatting an article.



Ed also has upgraded his ScraPeek utility to work with 2.1 photo albums.

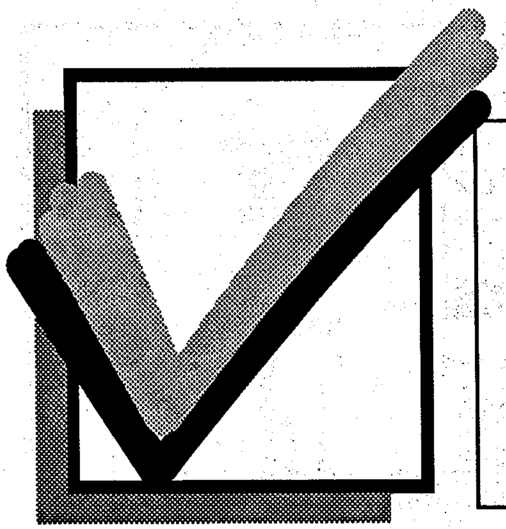
We've included Jim Colette's contest-winning *Font Editor 2.2* so you can "make your fonts fit" any application. There are plenty of fonts on the disk to practice with.

Disk 3 has some important patch programs for fixing *GeoTerm* and *Fontview* on the *RUN* Magazine GEOS Power Pak disk. Other features of Disk 3 include a formatted GEOWORLD article to see how we do it, more albums of clip art and a Master Page library of object-oriented art to use in geoPublish. New printer drivers have also been added.

The more complicated programs have instructions with them, but some are so easy, their use is apparent upon opening. Some of the authors have made use of help screens and built-in instructions.

We are in the process of improving our disk mastering, duplicating and shipping procedures. Thank you for bearing with us as we work out the kinks. We feel that the three disks have been very worthwhile and have helped many of you with your use of GEOS. Disk #4 is underway, but we won't announce it until it is ready to ship, thereby reducing your anticipation.

If for some reason you haven't received one or more of the first 3 disks, drop us a line, or call (602) 344-3537



ORDER DISK #3 TODAY

#1 & #2 are still available. Please indicate which numbers you want.

Send $10.00 check or money order with your request to:

GEOWORLD DISK #3
38 Santa Ynez Street
Santa Barbara, CA 93103

Canada & Mexico: add .50 per disk. Foreign orders, add $1.50 per disk.

the GEOS Report

GEOS Applications: A library of integrated software.

Part 3 of a special comprehensive report on the GEOS Environment
By Mike Ross

This issue briefly covers GEOS applications that are available separately from the Boot disk. They allow a computer user to perform a variety of different tasks from within the GEOS environment.

GeoWrite Workshop (GeoWrite Versions 2.x) -- The first separate application offered by Berkeley. This is a full-featured word processor offering left, right and full justification with multiple proportionately-spaced fonts. Features include paragraph margins and line spacing options, headers and footers, string search-and-replace, superscript and subscript style, automatic page numbering, multiple margin settings, decimal tabs, and non-bitmapped printing with or without NLQ spacing. Choosing the "Commodore" font actually puts the printer in its standard ASCII output and it will not print embedded graphics in the text. This allows for a much faster printing of documents.

In addition, an enhanced printer options menu allows for draft print copies, (without formatting or bitmaps). Designating which pages are to be printed (or skipped over), is also an option.

The Workshop includes **geoMerge**, for producing multiple copies of a document such as a form letter. A *Merge Data* document allows for unique names, addresses, etc., to be inserted in a desired geoWrite document. using defined *label names*. GeoMerge allows for *if-else* conditionals based on the value of a label.

The **Text Grabber** utility application is a useful converter program that will convert the text files of non-GEOS word processors into a new geoWrite data file. This feature allows a better integration to occur between GEOS and non-GEOS applications. A user who dislikes geoWrite as a word processor, but requires its use for its graphics capabilities and bitmapped fonts can use their favorite word processor, then convert it to GEOS and do the necessary "pretty" formatting desired.

GeoLaser -- is a program that addresses *POSTSCRIPT*, a page description language developed by *Adobe Systems* for laser printers. Used with special *Laser Fonts*, a document can achieve laser-quality 300 dpi (dots per inch) resolution. In addition, geoLaser also allows for the standard bitmapped fonts and graphics to be interpreted by POSTSCRIPT with an 80 dpi resolution. This article will be laserprinted using laser fonts. The "icon" font and photo scraps will retain an 80 dpi resolution.

DESK PACK -- is a disk of additional desk accessories and applications. The most useful application is **Graphics Grabber**. As its name implies, it does for graphics what Text Grabber does for text files. Graphics Grabber will allow the conversion of *Newsroom*, *Print Shop*, and *Printmaster* graphics to GEOS bitmapped format. A graphic can be made into a Photo Scrap or can be pasted directly into a Photo Album. Graphics can then be pasted into geoWrite, geoPaint, and elsewhere (as we shall see) for further manipulation and alteration.

The other application on DESKPACK is **Icon Editor** which converts non-GEOS files to GEOS format, and allows for customization of the file icon.

Desk accessories include a notes and engagement **Calendar** and **Blackjack** which simulates the game (on top of whatever you are doing).

GeoDex -- is a smallish version of geoFile and acts like a computer rolodex. Other than its graphic interface, it is not a very versatile program.

GeoFile -- is a graphic, flat file, database program. The data file form is created by pointing and clicking. Data fields can be moved around at will. GeoFile allows for multiple views of the data base. GeoFile creates up to 64 fields per record, 3000 records per file, and allows for custom forms design. The user can create text, numeric, comment and graphic fields. Along with search and replace, up to 64 multiple variables can be searched at once. Data can be sorted by defining the sort field. The sort field can be changed without affecting data. Data can be transferred to **geoCalc** for major number-crunching or data can be transferred to geoWrite. The data can also be used in conjunction with geoMerge and **geoDex**.

GeoCalc -- *Visicalc* was a first generation spreadsheet written in BASIC, slow and limited in its range of functions. *Lotus 1-2-3*, intoduced in 1982 for the IBM-PC, was the first 2nd generation spreadsheet offering power and speed. *Microsoft Excel*, introduced in 1985, was

--continued

the first 3rd generation spreadsheet, specifically designed for the *Macintosh* environment, offering an easy user interface. GeoCalc is an Excel-like spreadsheet for the low-end market. Bearing in mind that geoCalc runs on the C-64 (a 64K machine with a 1Mhz, 8 bit processor) and EXCEL runs on a MAC (a 512K, 7Mhz, 32 bit processor), geoCalc has some pretty amazing stats.

The most significant difference between EXCEL (for the 512K Mac) and geoCalc (for the 64) is spreadsheet grid size. GeoCalc's grid size is 112 x 256 while EXCEL measures in at 256 x 16,384. The estimated number of cells (limited only by disk size) is 5,000 for geoCalc and 4,000 for EXCEL.

GeoCalc offers 4 statistical functions, EXCEL, 11.

GeoCalc has 5 financial functions, EXCEL, 8.

GeoCalc has 13 mathematical functions, EXCEL, 18.

GeoCalc has 13 selectable numeric formats, EXCEL, 19.

Both offer relative and absolute referencing, "smart" recalculation, split screen, graphic interface, right/left/center adjust, and different typestyles. GEOS will allow cutting and pasting to other applications and spreadsheets can be printed with or without grids.

Paging out to disk can be slow as usual. There is no penalty in performance with a RAMDISK. It should be noted here that the statistical and mathematical functions are handled by the GEOS kernal (this article will not focus on this, though).

GeoSpell -- Yes, a speller for the GEOS environs. Geospell is a 28,000 word dictionary (not all that large), but also has a user dictionary. I asked Matt Loveless, of Berkeley Softworks, what data structure was used in geoSpell. His answer was, "*a **proprietary** data structure*." What he could tell me was that each first letter is in its own VLIR file with some kind of tree structure. He mentioned that there may be up to three levels of data compression using modified Huffman coding.

GeoPublish -- One of the true powerhouse applications. GeoPublish is a desktop publishing program that shines. The features of this program are well beyond the scope of this article. The application itself is a 99K file (for a 64K machine)! As a desktop publisher, it can create and layout multi-column documents, freely intermixing text and graphics. Articles are written in (or converted to) geoWrite format. Bitmaps are imported via the photo scrap, using the Photo Manager and Photo Albums, and via Graphics Grabber or like utilities.

GeoPublish can create multi-page documents in which the user lays out blocks of text using various geoWrite files. The Master Page (which can be 2 pages, for left and right positions), allows the user to enter special text and bitmaps that will repeat on each page. These text and graphics can be repositioned, textured, stretched, scaled, smoothed, and rotated.

Graphics page mode also has these same functions (and more) but are specific to the page. Master page mode allows for the user to define guidelines that the pointer will "snap" to (like a magnet effect). Headers, footers, page definitions are all saved here. Master pages can be saved into a library for future use on other documents.

As stated before, portions of different geoWrite text files can be layed out in Page Layout Mode. Once laid out, geoPublish *ripples* the text. This process redefines the margins to fit the width of the column and places a page break at the bottom of the text region. Each region on a geoPublish page is then defined as a particular page of a geoWrite text file. Text blocks can be resized and the text re-rippled at any time.

GeoPublish is the first application that uses the *PREVIEW* page as the standard "window" by which to work in, no longer a look-only function. In page graphics mode, there are various drawing tools that differ from geoPaint in a number of ways. The tools include open and closed splines, line, box and circle drawing.

These are defined differently by GEOS in a number of significantly important ways. Each bitmap, either imported from a scrap or drawn from the toolbox directly in geoPublish becomes a separate and distinct bitmap that can be clicked on (called on) and be repositioned, scaled or deleted. In addition, each bitmap has its own set of attributes that can be changed at any time. Bitmaps can be tranparent or opaque. It should be noted that this type of bitmap handling was intended to be POSTSCRIPT addressable. Final results on a laser printer can offer 300 dpi resolution.

Special text (not from a geoWrite file, but entered directly on the page), can be scaled to any point size, justified, given an up or down, vertical or horizontal orientation, and smoothed. In geoPublish, data concerning point size of a particular font can be scaled up, therefore even multiples of a true point size will enlarge gracefully. Laser fonts work particularily well in this medium. Special **Mega Fonts** that exceed the 4,096 geoPublish font file byte limitation are used for best results at 48 points and above.

A geoPublish data file will house all the necessary bitmap data, plus contain links to the text files which stand apart from the main file. In order for geoPublish to coordinate all its bitmaps and text files for logical printing, geoPublish will use the screen memory to put all this information together. The screen basically whites out during the printing process. GeoPublish excels when working with a RAM DISK and it is certainly a necessity for large documents. GeoPublish has most of the features of *ALDUS' Pagemaker.*

GeoChart -- With this application, a user can create charts and graphs with data from several programs: geoFile, geoCalc, geoWrite and the Notebook (new version only). The chart styles supported are: Area (transparent or opaque), Bar, Column, Pie, Point, Line, Scatter (point or line), and Unibar. The charts are created in the form of photo scraps, so can be embellished in geoPaint or used as is, in geoWrite and geoPublish.

GeoProgrammer -- a powerful and sophisticated set of assembly language development tools, designed specifically for bulding GEOS applications. Berkeley Softworks uses their UNIX-based microPORT (which contains the ICE). In addition, BSW has over 250 macros in their 6502 library at their disposal. With the microPORT and their library of macros, porting applications between computers is a swift process. To port a standard-sized GEOS application from the 64 to Apple II takes only 3 weeks if no special Apple features are added.

GeoProgrammer is a scaled down version of these development tools. Like geoPublish, geoProgrammer is a massive program with great power. There are 3 components to geoProgrammer: geoAssembler, geoLinker and geoDebugger.

GeoAssembler -- reads source text from geoWrite files, converting graphics and icon images into binary data. The assembler, of course, recognizes all 6502 mnemomics. It allows over 1,000 symbol, label, and equate definitions; it allows full 16-bit expression for arithmatical or logical operations; it supports local labels as targets for branch instructions; in addition, the extensive macro library allows nested invocation with multiple arguments; it does conditional assembly, memory segmentation (in the GEOS style),and space allocation directives; and lastly, geoAssembler generates relocatable object files with external definitions for modular programming.

GeoLinker -- takes the created object files and links them together, resolving all cross-references, and generating a runnable GEOS application file. It should be noted at this point in the process geoLinker that "fixes" specific memory locations to the application, required by 64 architecture. The link file is created with geoWrite. GeoLinker can create all application types (sequential, desk accessory, and VLIR), allowing for the customized GEOS header and icon. It can also create non-GEOS file types that do not require GEOS to run. Complex expression evaluation can be resolved at link tim. GeoLinker can handle over 1,700 unique externally referenced symbols. Most importantly, geoLinker supports VLIR overlay modules.

GeoDebugger -- A debugging environment for newly created applications. Features of geoDebugger are as follows: it resides with the application by maintaining two independent displays (a hi-res screen for the application and a text screen for the debugger); it automatically takes full advantage of an REU, allowing full usage of all available program space; it has an extremely comprehensive set of memory examination and modification commands including memory dump, fill, move, compare, and find; it has symbolic assembly and disassembly; it allows up to 8 conditional breakpoints; the developer can single step and sub-routine step, plus has loop, next, and execute commands available; the RESTORE key is used to halt program execution and return to the debugger; finally, geoDebugger contains an extensive macro programming language to automate multiple keystrokes and customize the debugger command set.

GeoProgrammer is *the* most powerful development tool ever offered for the 64. The memory map of the kernal is courtesy of geoProgrammer.

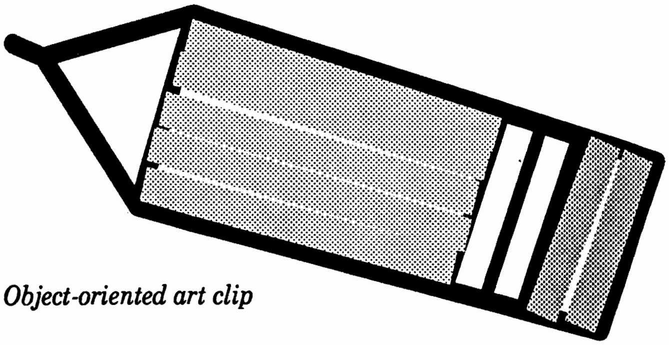
Forthcoming GEOS applications include **geoBASIC**, an interpreted BASIC that is also structured. GeoBASIC will, of course, be able to handle all of the special GEOS graphics, string, and disk routines. I asked Matt Loveless why geoBASIC was not a compiled basic. His response reflected a user demand for the product. More importantly, Mr. Loveless felt that geoBASIC would not significantly run any faster as geoBASIC's extended command set will consist of "procedural"-like calls to kernal routines.

GeoNet, a temporarily shelved idea, received a lot of attention over the last few months. The idea of creating a LAN in school districts with an installed base of Apple II and 64 computers was the motivating force behind geoNet. A PC would be be used as a file server (I love it!!). Computers running under GEOS would be able to share most application data files. Apple has since released Appletalk which is somewhat similar to geoNet. Apple is now just beginning to acknowledge the new Apple GEOS as something potentially significant for their 8-bit computers (of which a new model is planned). Berkeley appears not to want to step on Apple's toes. GEOS comes bundled with the 64; perhaps Berkeley would like to see the same bundling with a new Apple computer. GeoNet seems like a logical step in Berkeley's plan to create a unified low-end operating standard.

In addition to the above applications, BSW has released disks of fonts, along with font editors, Softsync released **Personal Publisher**, another GEOS desktop publishing program. Spinnaker has released a post-formatting (not WYSWYG, but faster) word processor called **Word Publisher** for the GEOS environs. To top it all off, there are hundreds of public domain and shareware programs running under GEOS, noticeably the Mystic Jim collection, TTGrafix's various font disks, Susan Lamb's graphics and fonts, a number of converter programs such as **MACTOGEOS**, plus other games and programming utilities have made for a rich library for the GEOS user to employ.

With this overview, a look at the kernal and I/O can now be approached with an eye towards the special libraries of routines that allow GEOS to do so much with so little available memory. In the next issue we'll look at GEOS File Structures.

--Mike Ross



Object-oriented art clip

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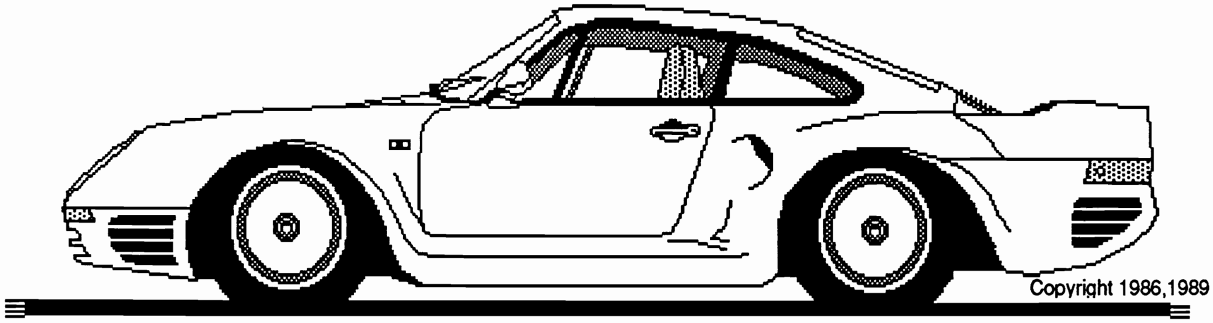

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- Graphic Goodies 1
- Graphic Goodies 2
- Weather Stuff
- GEOpaint Tips 1
- GEOpaint Tips 2

DISKART 2
- Graphic Goodies 3
- Little Guys 1
- Holidays 2
- Workdisk Labels
- Musical Stuff 1
- GEOpaint Tips 1

DISKART 3
- Vehicles 1
- Vehicles 2
- Porsche 959
- Tin Lizzies
- Warbirds 1
- DC-3 Airliner
- F4 Phantom

DISKART 4
- Little Guys 2
- Foodstuff 1
- Ovals, Blocks, etc
- C64 & Periphs
- Tools 1
- Gardening Stuff

DISKART 5
- Make-A-Face
- Drafting Equipment
- Vehicles 3
- Banners 1
- Flowchart Symbols
- Little Women 1
- Little Women 2

DISKART 6
- Farm Animals
- Critters 1
- Zoo Animals
- Dogs 1
- Cats 1
- Fish 1
- Space Creatures

DISKART 7
- Big Boats
- Small Boats
- Tropical Stuff
- Baby Items
- Graphic Goodies 4
- Man/Woman Heads

DISKART 8
- Graphic Goodies 5
- Graphic Goodies 6
- Silly Pictures
- Holidays 3
- Computer Humor

DISKART 9
- Warbirds 2
- Trains 1
- U.S.Jets
- Vehicles 4
- Old Vehicles

DISKART 10
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- Church Pix 2
- Dinosaurs
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To Copy Protect, Or Not To Copy Protect

And Should That Really Be The Question?

By Dale Beach

There's nothing like a good controversy to liven things up. Usually there is a heightened awareness gained as a result of controversy. Marshall Kragen, with his comments and ideas about software piracy and copy protection raise some important points which will, I hope, do just that.

There are a lot of questions to be dealt with on this subject. When a company decides to protect their investment by using copy protection, who really gets hurt? The consumer? The software thief? And who gets hurt when a company doesn't copy-protect their software? If some person's or group's rights have to be limited, whose, and how much? Beyond that, regardless of who does and doesn't get hurt, what's the right thing to do?

These are matters which should concern anyone who uses software of any kind. We all have to wrestle with ourselves about what the "right" answers to these questions are.

Personally, I have a strong aversion to telling others what to do. So let me say that I offer these thoughts as just that: thoughts only. It would be silly, I think, to propose that my ideas are definitive in any way. They're just an approach to consider.

Let me also mention that I sell software myself. You should probably know that, if you're going to make a fair judgement of the validity of my ideas.

I agree with Marshall's assessment of Commodore users as being notorious stealers of software. I've run across that myself, among software users, or more accurately, abusers.

I also agree with him (for obvious reasons) that the creator of software should be given due payment for their work, as should anyone in any field.

He mentions a "game-machine mentality" among Commodore users as being a possible reason for the theft that goes on. There are other possible reasons too. Thrill-seekers may tend to steal, even though they have no real need to. People who can't otherwise afford software may be tempted to steal. Others may consider themselves to be modern day Robin Hoods, taking from "the rich, arrogant software companies" and giving to "my poor, deserving friends".

The message I'd like to send to any of these groups is **you're stealing**. Notice I'm avoiding using the word "pirate"; the word pirate has a certain mystique to it. Pirates go around swashbuckling and leading romantic lives, pirates don't commit theft!

But what about the person who legitimately wishes to make archival, or backup copies of their own personal software? From what I've read in other major Commodore-oriented computer magazines, that's legal. Once you buy it, you have a right to protect your investment. And the procedure for making backup copies is identical to the procedure for stealing software.

Those people have a right to the information which tells them how it's done. But when Marshall says of the dispensing of this kind of information, "...let it not be in a public forum where the information will fall into improper hands..." my antennae go up. This kind of "information control" sounds too much like censorship to me. I seriously doubt that it was his intent to censor anyone, but I do believe that such an act would put very unfair limitations on innocent people.

I have no doubt that he's right that people are abusing the programs that break copy protection. But is the problem really serious enough to warrant restricting the rights of innocent people? I don't think so. Not because the problem isn't serious, it is serious. I just feel that a problem has to be near life and death before resorting to any kind of information control.

When we look at the software theft problem, I feel we tend to make a mistake common to problem solving of any kind. We take the easy way out by implementing barriers and restrictions. Barriers and restrictions are necessary, of course. Some people will probably always need to be limited. But I feel that such restrictions are too often a reflection of our inability to solve problems in more intelligent ways.

People (at least some of us), are the problem. We need to change what's going on inside ourselves. You can't do that by taking away rights or information. You can give the appearance of it, but it's really like squeezing a balloon. If you restrict a balloon on its surface somewhere, it will just pop out somewhere else. If you keep restricting it in more and more spots, it will eventually burst.

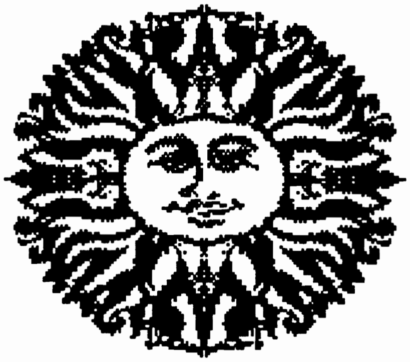
Marshall certainly did not suggest that we restrict people this much. I do believe, however, that his idea of limiting access to this type of information could easily become a step towards such restrictions.

That's why I appreciate that he made other suggestions, approaching the problem from different angles.

The idea of BSW, or any software company, providing the option of exchanging your disk for another format is appealing. That would encourage people to maintain contact with the company. If any new versions of relevant programs were released, they could be updated at the same time. Not a bad idea.

See COPY PROTECT, Page 20

BSW and the Future



By Marte Brengle

It seems like a very short time ago that I was leafing through the pages of *Compute's Gazette* and saw an ad for the new "Graphics Environment Operating System" soon to be released by Berkeley Softworks. From the text in the ad, it looked as if this was a program that would open up brand new worlds for the Commodore 64. I cut up my magazine and ordered a copy.

When it arrived, I tried to load my disk, but nothing much happened. After several unsuccessful attempts to load the program, I dialed the customer service number listed in the manual. I got a busy signal the first time, but after about five minutes, I got through to a friendly, helpful woman who told me to send the defective disk back to BSW. I mailed the disk on a Thursday morning, and by the following Wednesday I had a brand-new, perfect GEOS v1.2 disk in my hands, and a very high opinion of BSW's Customer Service department.

In the interim, I'd had plenty of time to read the manual, (I'm one of those rare people who reads a manual from cover to cover before I try out the program), so I had a pretty good idea of what to do with my new disk. I ran it, according to instructions, made a backup disk... and then what?

It didn't take me long to discover that the word processor was pretty primitive. I typed a lot faster than the screen display could keep up with, and the "screen flip" drove me nuts till I learned how to change the margins to fit the size of the screen. The program didn't have the versatility of the *SpeedScript* word processor, although it was nice to print things out in different fonts. (I found that "Telegraph" suited my personality quite well, and I sent out a lot of letters typed with it.) Ah well. geoWrite was a nice idea, but definitely not suited to serious use.

So I tried geoPaint. Very versatile, but not so easy to control the cursor with a joystick. It was also difficult to work on a large drawing in sections and make sure that the pieces matched up, not to mention the "geoLogical" ages that it took to get the cursor across the screen with the repeated reads from the slooooow 1541. Another nice idea, I said, but now what do I do with this program?

Shortly after that, I went to a user group meeting and talked about GEOS. I said I thought it had real potential, but I wasn't entirely sure what to do with it. A fellow group member said that he'd gotten the disk and had followed the instructions and had ended up formatting his master disk. When I looked at the instructions again, I saw that this was a very real possibility, and I wondered why on earth the manual wasn't more clear on that point.

My kids wanted to "play" with geoPaint, but I didn't think that was a particularly wise idea. At the time, I had no way of copying the master disk, and I wasn't too eager to have my $60 disk dropped under the chair casters or left in a puddle of milk and a pile of cookie crumbs on the desk. I let the kids use it only under strict supervision. They liked it, but they didn't like having me hang over them every minute, so they soon quit asking to use it. Since I didn't have any real use for it myself, I eventually put the disk away.

I continued to answer questions about the program at the user group and on several of the national computer networks, but I wasn't actually using the program. I began to think of GEOS as a classic case of "all dressed up and no place to go."

Time went by, and I began to see an interesting pattern developing among Commodore users I knew. It seemed that people either loved GEOS or they sneered at it. There was very little middle ground. I continued to believe that the program had a lot of potential and that there was definite hope for the future, but I couldn't find any serious uses for the program in my own life. And, after reading message after message about how the copy protection scheme was causing untold difficulties for honest people, I began to see some of the reasons why more sophisticated computer users might well sneer.

Eventually, I bought a copy program that would make "cracked" bootable copies of GEOS, and made a couple for myself and a couple for my kids. The kids had a fine time creating geoPaint drawings and writing things with fancy fonts, but I still couldn't find many reasons to use GEOS myself. I joined Mystic Jim's Shareware group, since that seemed to be the best way to get the newest and best in GEOS programs, especially those that weren't allowed on the national network boards.

At the Commodore Show in Los Angeles in 1986 I met Rob Siegel, who was in charge of the BSW booth. He showed me how the new 1351 mouse would work with the program, and I was impressed. As soon as I found the new mouse on the shelves, I bought one. There was an "upgrade" disk included in the box, to change my v1.2 GEOS to the new v1.3 that would support the proportional mouse. I decided that discretion was the better part of valor, and ran the upgrade on my "cracked" copy rather than on my original disk. It worked, and it even booted after I used Mystic Jim's "Bootstrap" program on it, but when I tried to change the disk around a bit, I found that the boot files were promptly erased. Well, I am nothing if not stubborn, and I still did not want to mess with my original GEOS disk, so I tried again, and again.

Eventually, I figured out how to make a bootable "upgrade" from a cracked copy, and I did so, and quickly slapped a write-protect tab on the disk. I was growing more and more unhappy with the copy protection, and seeing more and more messages from honest buyers whose disks had been trashed (and, eventually, the admission from BSW that some of the "upgrade" disks were faulty and could indeed damage or destroy legitimately-purchased GEOS disks). There were repeated cries of anguish and repeated requests from the users for an end to copy protection and an end to the whole "serial number" business. BSW wasn't interested in doing that; they were committed to their copy protection scheme, even though there was no evidence anywhere that it was doing anything to deter piracy, or, indeed, doing anything but destroy disks for legitimate buyers.

While BSW management was stubbornly defending their copy protection, their programmers were working hard to put out new and imaginative programs that would work in the GEOS environment. They improved *geoWrite* substantially; they came out with a database and spreadsheet & the *DeskPack* utilities. Unfortunately, their manuals did not keep pace with the increasing sophistication of the programs, and again there were hundreds of anguished messages from people who had mis-keyed applications disks, or who had messed up the "installation" process somehow. The response from BSW was usually to tell the poor user to send back the messed-up disk, usually with some money, and they would fix the problem, even though it was not necessarily the user's fault that the disk had been destroyed.

GEOS 128 was released, and I immediately sent in my upgrade form and was delighted to see GEOS in crisp, clear glory on the 80-column screen. But the GEOS 128 manual was a mess, as was that of geoWrite Workshop 128 which followed it. Important information was simply missing, and the section that talked about how to "install" your disks was so poorly written that I believe it would have been almost impossible for me to do it correctly had I not seen messages on QuantumLink describing the procedure and the proper answer to the on-screen questions in detail.

More time went by. GEOS v2.0 was released, and it was everything I had thought the original GEOS could be; a versatile, multi-featured, and user-friendly environment including programs that finally approached the quality of their non-GEOS equivalents. BSW had listened to the customers in one respect, since they had included so many of the most-requested features. However, they still were not paying attention to the call for removal of the copy protection, nor for a release of GEOS on a 1581-format disk.

Apple GEOS was released, originally in an equally copy-protected version, and Apple users set up a squawk that was apparently heeded. The copy protection on Apple GEOS was quickly dropped. Apple GEOS was also released on 3.5" disks from the very beginning, although it was not considered feasible to do the same with the Commodore version. Brian Dougherty gave an interview to the Gazette in which he claimed it would be possible to exchange files between the Apple and Commodore versions of GEOS, thus making both programs more versatile. As of this

...ON THE VERSATILITY OF COMMODORE COMPUTERS

I thought that it might be interesting to demonstrate the astonishing versatility of Commodore equipment by talking about how my article "BSW AND THE FUTURE" was written.

At the present time, the keyboard on my C128 is in the slow and messy process of dying. The space bar no longer works, nor does the left shift key, and quite a few of the other keys are on their way out. Cleaning the keyboard both inside and out hasn't solved the problems, and about all there is left for me to do is get a new keyboard for it. I've talked with Commodore about it, and they've given me a part number and a price and the estimation that it may take four to six weeks for the part to arrive.

Ugh. That is a long time to be without a functional keyboard on my favorite computer, especially since I make my living as a writer. How, then, have I managed to keep going?

Well, next to my C128 sits an inexpensive IBM XT clone. I've had it for a while, since some of the work my husband and I do requires MS-DOS capability. I can see the appeal of clones, sometimes, but I can also see that in many ways the C128 is a far more versatile machine.

To produce this article, I first wrote the copy on the clone using a public domain text editor called EDWIN, which saves files as "straight ASCII" without any formatting codes. I put the text on a MS-DOS formatted disk. Then I fired up my wheezing C128 and loaded a program called Crosslink 2.1, by Miklos Garamszeghy, which will transfer MS-DOS and CP/M and Commodore format files back and forth from one disk type to another. I then transferred the article's text to a Commodore-formatted disk.

Then I ran Pocket Writer 2, loaded in the article, and did some limited reformatting and "touchup" work on it. I re-saved it as a Pocket Writer PRG file. Then, finally, I could load GEOS 128, open my geoWrite Workshop 128 disk, and use the PaperClip text grabber to "grab" my files into GEOS format. Using the mouse and the keyboard, I could re-font and re-format the article for printout, save it to a GEOS work disk, and then use Convert 128 to put it into final form for uploading to QLink for GEOWORLD.

That was a lot of work, to be sure, but at least I had the tools at hand to accomplish it. I don't believe any other kind of computer would give me the capability to transport files among so many different formats. Certainly I can't do anything like that with the clone, and I suspect that I never will be able to. That's one reason why my C128 is going to have an honored place on my desk for a long time to come.

--Marte Brengle

writing, however, no such thing has yet come to pass.

BSW abruptly discontinued its telephone customer support. Having seen the nature of the messages on QuantumLink, and how often the same questions were repeated, (and how frequently people were somewhat less than polite in the way they phrased things), I could almost see the point. For many of the questions the best answer has always been, READ THE MANUAL. However, given the sometimes vague, mis-leading, or sometimes downright WRONG nature of the manuals in question, it isn't always appropriate to expect people to find the right answer there, even if they do read them. And, given the nature of the copy protection, and the dire consequences that result from even the slightest deviation from the instructions, it is not surprising that the same problems and questions arose over and over again.

So, here we faithful GEOS users are, finally seeing the program the way it was meant to be, but frustrated at every possible turn by the company which manufactures it. Can we, and GEOS, survive?

I believe so, but I think that radical changes are in order. I believe that the users of Commodore GEOS, who have in many ways served as "guinea pigs" for BSW, deserve to be treated with a bit more respect. In light of this, I propose the following.

First of all, all copy protection and "serial number" keying on Commodore GEOS products should be dropped immediately, and all BSW *Trojan Horses* should likewise be abandoned. BSW should release into the public domain a program (or a set of programs) that would "retrofit" existing copies of GEOS to remove the protection. The advantages of this would be immediate. Customer Service people would not have to spend most of their time answering questions about damaged or mis-keyed disks, and GEOS users would not have to keep sending back their disks for repair, thus tying up even more BSW personnel. And, of course, BSW's reputation among the users of their programs would be greatly enhanced by this gesture of willingness to operate under the assumption that most people ARE honest.

Second, a set of files should be immediately made available for downloading on QuantumLink that answer all of the most common questions about GEOS. Then instead of answering each and every question, the BSW representatives could just say "Please download 'ANSWERS' from our software library, and you'll find your question answered in detail." The same files should be printed out and mailed to all registered GEOS users on request, and they should form an integral part of each and every GEOS package from now on.

Yes, this will involve some initial expense. But I believe that it will save money, time, and frustration in the long run, to say nothing of easing the burden on Customer Service people.

Third, attention should be given to correcting all known bugs in both the programs and the manuals, before any new programs are introduced for Commodore or any other brand of computer. Bug-free versions of the programs should be made available to registered users for the same price it now costs to have a mis-keyed disk repaired, and new manuals should be made available for the cost of printing and shipping. (Alternatively, an "errata" file that corrects the current manuals could be made available for downloading through QLink.)

As I sit here typing, I can see the boxes for nine GEOS programs on my shelf. Some of them I use fairly often (like geoPublish) and some of them I have never used after their initial installation (like geoDex, which was given to me as a Christmas present). All the programs, as well as the GEOS environment itself, are the products of highly creative minds, and they have gone a long way toward making Commodore computers more productive and easier to use. But the time has come, we users say, to think of other things. If GEOS 2.0 is any indication, BSW is on the right track. All it will take is a willingness to work WITH the users and the courage to say "We were wrong, but now we're going to make it right."

--Marte Brengle

COPY PROTECT from page 17

Charging additional for unprotected software could work too. It would be something like the deal that some muffler dealers offer in my area. You can purchase a muffler with a lifetime guarantee for a certain price, or you can buy the same muffler without the guarantee for less. Why not implement a "you get what you pay for" approach? In addition, if at some point a person who purchased copy protected software decided they wanted the convenience of unprotected goods, they could upgrade to that format for a reasonable fee.

Finally, I'd like to mention that I agree with Marshall's assessment of many of the remarks made on Q-Link as "mudslinging". I've commented online that I find such remarks offensive. I have no doubt that a *geoWorld* is the better forum for expressing ideas with more depth than Q-Link could ever be. Still, I find an important value in the type of format that Q-Link provides.

Mike Peters, the Pulitzer Prize-winning political cartoonist, while lecturing, was talking about what a political cartoon is and what it's meant to do. Earlier on in his career he was agonizing at the bar over how political cartoons can sometimes be misleading, since they are in such an abbreviated form, usually only one picture, and a few words.

One of his senior colleagues said to him, "Leave the in-depth stuff for the story-writers. Your job is to get people ticked-off so that they'll want to read the articles!"

And so it is, I believe, with Q-Link and geoWorld.

--Dale Beach

GEOS TURNS THREE

GEOS HAS COME A LONG WAY IN THREE SHORT YEARS

The introduction of GEOS three years ago revolutionized Commodore computing. GEOS offered Commodore users a new world of graphically oriented applications and brought utility previously unknown to a so called "aging" and "outdated" 8-bit machine. Since then, a whole universe of integrated GEOS productivity programs has been released and over 1.7 million copies of GEOS alone have been distributed worldwide. The following presents highlights from the unfolding GEOS story. Although still in its infancy, I think you will agree that GEOS has come a long way!

GEOS was first introduced in March of 1986. Commodore Business Machines was so impressed with this new operating system that in June executives designated GEOS the official disk operating system of the Commodore 64/64C and began bundling GEOS with all new Commodore 64C computers. By the end of the year, four new GEOS applications (FontPack1, DeskPack1, geoDex and Writer's Workshop) were released and GEOS was distributed in eleven different nations worldwide.

Continuing to breath new life into the Commodore computer, Berkeley Softworks released six more Commodore 64 GEOS applications (geoFile, geoCalc, geoPublish, geoSpell, Triple Pack and geoProgrammer) in 1987. A new version of GEOS was developed to take advantage of the Commodore 128's capabilities and GEOS 128 and geoWrite Workshop 128 were instant successes.

As the international GEOS market grew, localized versions of GEOS emerged; in August, Markt&Technik sold the first German version of GEOS. At home, Roger published the first issue of GEOWORLD and LaserDirect began laser printing GEOS documents. The year concluded with much excitement as *Run* and *Compute!'s Gazette* magazines debuted GEOS-specific columns and the Software Publisher's Association, a group comprised of software developers, distributors, manufacturers and press, voted GEOS the "Best Technical Achievement" of 1987.

The GEOS library of application products multiplied in 1988 when Berkeley Softworks released five more GEOS applications (geoFile 128, geoCalc 128, FontPack *Plus*, DeskPack *Plus* and geoChart) and a major upgrade to GEOS, GEOS 2.0. Two additional monthly GEOS columns appeared in *Commodore* and *Info* magazines.

Also in 1988, a new GEOS was released for Apple // computers. In March, GEOS was introduced for Apple //c, //e, and //GS computers. *inCider Magazine* called a special Apple //c Plus version of GEOS the best productivity software available for this machine. geoPublish appeared later in October.

By this time, GEOS had grown very popular within the Commodore community. Several GEOS applications were awarded first place in Run Magazine's 1988 Reader Choice Awards: GEOS for integrated software, geoCalc for spreadsheets, geoFile for databases, and geoProgrammer for programming aids. Q-Link's 1988 People's Choice Awards voted GEOS the best utility software and geoPaint the best graphics software of the year.

Even though 1989 is not even half over, Berkeley Softworks has already released GEOS 128 2.0 for Commodore 128 computers and geoFile and geoCalc for Apple // computers. Presently, Berkeley Softworks is developing new programs for new hardware platforms.

So you see, GEOS *really has* revolutionized Commodore computing! At the young age of three, GEOS has expanded the utility of Commodore 8-bit machines and has provided users with a whole wealth of integrated productivity applications. And, thanks to users such as yourself, GEOS has an entire network of individuals who are working hard to improve the GEOS universe by creating new applications and teaching others how to achieve what a few years ago was unimaginable with the Commodore computer.

Staci Glovsky
Berkeley Softworks

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Inside Geos

A programmer's eye view into the world of Geos

By William Coleman

Geos provides many of the niceties make an application eye-catching and easy to use with a minimum of programming effort. Unfortunatly this very often is a double-edged sword.

While many of the tedious, repetitive programming tasks have already been done for you, you are also constrained within the framework of the system. Your applications inherit all of the deficiencies of the Geos Kernal.One of my goals is to find ways to expand on the routines provided by Geos and still maintain compatibility.

In my last few articles I showed you a way to expand the default DB File Box an thereby provide both you and your users with a much greater flexibily with a minimum of effort. This month we will examine menus and I will show you some ways that they can also be improved upon. I'll be providing several routines that will help you along.

A Persistant Bug

Before we get started let me give you a little bit of background about how these routines came about.

One of the most persistant bugs in Geos is the inability to extend a menu past column 255 without the menu going nuts. Unfortunatly this bug has propagated through every version of Geos including Geos 128 V2.0 (don't ask me why - it shouldn't be that hard to fix)

While it is easy enough to get around this problem on a 40 column screen (a menu can take up most of the screen width), it presents some major problems when working with the 80 column screen. After all 256 dots is not much more then a third of the screen.

I ran smack into this bug again while writing my terminal program. The Geos 64 version has a menu that extends to column 253. When I was porting it over to the 128 I simply multiplied this by 1.3 for the 80 column screen (this is a good rule of thumb that usually comes out about right). I was assuming that the menu bug had been taking care of in the 128 versions. Silly me. You would think I would know BSw by now!

So I had a problem: how do I get the menus to work properly on an 80 column screen without having to redesign to whole thing (something I was definatly not looking forward to). At first I tried to see if I could find a way to make a large menu work. No luck there I'm afraid.

> ***" One of my goals is to find ways to expand on the routines provided by Geos and still maintain compatibility."***

So I finally came up with what I considered a fairly good compromise: I simply trick UseSystemFont into thinking that the computer is in 40 column mode so that it will select the BSW 40 font instead of BSW 80. In case you didn't know it the Menu Handler calls UseSystemFont to change to the default font, draws the menu on the screen, and then restores the current font after the menu has been drawn.

UseSystemFont for the 128 relies on a variable called graphMode ($3F) to tell it what mode the computer is in. The problem is then reduced to figuring out a way to temporarily change graphMode.

Modifying the Kernal

My first thought was to use a dynamic sub-menu to change graphMode. But unfortunatly changing graphMode from there would be a pain because there isn't any simple way to change it back . Sure you could make all of the Service Routines for the menu otions do it but what if the user simply moves off the menu? I suppose you could patch into RecoverVector but that would be more trouble then it is worth. There had to be an easier way.

The only other alternative I could think of was to modify the Kernal itself. Some people frown on the idea of modifying the Kernal but I have found that it works well and is quite safe as long as you follow a couple of simple steps:

1) Always use the jump table to locate routines, this will ensure your code will work on all versions.

2) Make sure that you restore the system *exactly* as you found it before your application terminates.

The Code

Take a look at Listing 1. It contains the code necessary to modify UseSystemFont. It's operation is really quite simple: just use the Jump Table entry for UseSystemFont to

Listing 1

```
;************************************************************
;Menu Font Switcher
;Author:        William C. Coleman
;Start Date:    12 Jan 1988
;Notice:        Copyright (C) 1988, William C. Coleman
;************************************************************

InitMyFont:
;   Makes UseSystemFont point to UseMyFont. Call during initialization.
                pha
                tya
                pha
                PushW   r6
                lda     USFBuf                  ;has already been done!
                bne     MyFontExit
                MoveW   UseSystemFont+1,r6
                ldy     #2
10$:
                MoveB   "(r6),y","USFBuf,y"     ;save first three bytes
                MoveB   "USFNew,y","(r6),y"     ;and insert JMP
                dey
                bpl     10$
                bmi     MyFontExit

KillMyFont:
;Restores UseSystemFont. You MUST call this beforeEnterDeskTop!
                pha
                tya
                pha
                PushW   r6
                lda     USFBuf
                beq     MyFontExit              ;never been initialized
                MoveW   UseSystemFont+1,r6
                ldy     #2
10$:
                MoveB   "USFBuf,y","(r6),y"     ;restore first three bytes
                dey
                bpl     10$
                iny                             ;Y is now zero
                sty     USFBuf
MyFontExit:
                PopW    r6
                pla
                tay
                pla
                rts

USFNew:         jmp     UseMyFont               ;bytes to be inserted

USFBuf:         .block  3                       ;don't use ramsect here!
```

find the starting address for the routine. Then pull out the first three bytes and save them in a buffer. Finally substitute in a JMP instruction that points to the routine you wish to execute

You may be thinking that it would be easier to simply modify the Jump Table but unfortunatly it isn't quite that easy - the Menu Handler doesn't go thru the Jump Table but instead it calls UseSystemFont directly. Not the best implementation but we're stuck with it.

Always buffer the first three bytes of the routine, never assume you know what is there. Routines do change a bit from one version to the next.This is especially true when comparing Geos 64 and Geos 128.When modifying things like this it is best to err on the side of caution.

There are two routines available to the application; the first, InitMyFont will make the necessary changes to UseSystemFont. The second, KillMyFont will put things back the way they were. You must ensure that you call this routine prior to calling EnterDeskTop. If you don't when the deskTop is loaded UseSystemFont will JMP into garbage - not a very good idea to say the least!

Checks are included to ensure that calling either routine twice will not cause any problems. If these checks weren't included then the second time InitMyFont is called the contents of the buffer would be lost preventing proper recovery when the application exits (the bytes you plugged into the routine during the first call would overwrite them).

There is one other point that you must remember: the DB Handler will also call UseSystemFont when it is opening a Dialog Box. Since fonts can easily be changed from within a DB there is no real use for the font switcher in DB's (and would usually cause more harm then good). Therefore always call KillMyFont before a call to DoDlgBox and then call InitMyFont when the DB closes.A simple solution is to use a routine like this:

```
DialogBox:
    ; pass r0 just like DoDlgBox
    jsr  KillMyFont
    jsr  DoDlgBox
    jsr  InitMyFont
    rts
```

Simply changing all references to DoDlgBox in your application to DialogBox will prevent the font switcher from affecting DB's.

Some Service Routines

Now that we have the code to install the wedge we need the code for the routine that actually does the job. This is the routine that *USFNew* points to.There are quite a few different things you can do with the routine depending on the effect you are trying to achieve. Let's take a look at some of them.

Listings 2 and 3 are two examples of service routines for the font switcher.The first one is the one I used to solve the problem with my 128 version terminal. It will only function on a 128 (although you could put in a check for Geos 64 to allow your application to run on both computers).

It's operation is quite simple. Since the routine will need to call UseSystemFont, KillMyFont is called to remove the font switcher wedge. Forgetting this step would lead to an endless loop.The next thing it does is to temporarily set graphMode to indicate that the computer is in 40 column mode. UseSystemFont is then called to set the pointers to BSw 40. Finally graphMode is restored and InitMyFont is called to re-initialize the wedge.

Listing 3

```
.if (0)
*************************************************************
Replacement #2 for UseSystemFont. This one simply
activates the font of your choice. Note that this font must
already be in memory.
*************************************************************
.endif

UseMyFont:
                LoadW   MyFontTable         ;starting address of new font
                jsr     LoadCharSet
                rts
```

Listing 2

```
.if (0)
*************************************************************
Replacement #1 for UseSystemFont. This one is for the
128 only and will cause BSW40 to be selected regardless
of the video mode.
*************************************************************
.endif

UseMyFont:
                jsr     KillMyFont          ;back to normal
                PushB   graphMode           ;save mode
                and     #%01111111          ;fake 40 columns
                sta     graphMode
                jsr     UseSystemFont       ;selects BSW40
                PopB    graphMode           ;restore mode
                jmp     InitMyFont          ;reset pointers
```

The net effect of this is that all menus will be displayed in BSw 40 regardless of what mode the computer is actually in.Menus modified in this way look a bit tiny in 80 column mode but they are still quite usable

An added benefit of doing things this way is that the menu tables do not have to be modified when you change modes, the same tables are used (which only makes sense since the font is always the same).

The routine in Listing 3 is even simpler - all it does is initialize the font of your choice. Remember that the font must already be in memory or you will have a mess.

Point Size

These two basic variations of UseMyFont are the ones that you will be using most often. There are however several things to can do to the font itself to add a bit of flash to your applications.

The most obvious change (besides the shape of the characters) is the point size. Any size is acceptable as long as you can fit it into memory. Of course

Inside Geos

if the font is too big it will look rather silly so use a bit of restraint in your selection. Remember that you will need to resize the menus if you increase the point size. Also keep in mind that the formula for sizing vertical menus will also change with a change in the point size. You will probably have to experiment a bit to find out what the new formula is. I haven't done any testing in this area but you might try this:

height=(point_size+5)*#_of_entries

this formula should at least give you a starting point to work from.

Special Effects

Here is a neat trick: for those of you familar with the Mac or IBM Windows you have probably noticed that their menu options can contain small pictures next to the text. You can simulate this effect by modifying some of the unsed characters, punctuation marks would be a good choice, in your new menu font.

For example let's say that you have a menu option called 'disk'. You could use a font editor and change the semi-colon character to a little picture of a disk. Then simply put a '<space>;' at the end of the 'disk' string in the menu table.Now the picture will be displayed with the string just like any other character (after all it is)!

Be careful not to make the pictures too big or they will oerpower the text. Again experimentation is the key to a good looking menu system.With some practice you should be able to get them just right on the first try.

One last suggestion I'd like to make: once all of your menu options are complete you should use a font editor to remove (set to a single pixel space) all of the unused characters in the font. This should save quite a bit of memory space and decrease the load time.

That's about it for this month. I've put together a disk of subroutines because I know that these routines can be a pain to type in. It contains all of the modules I've talked about over the months plus quite a few others which I haven't discussed yet. I think you will find that will make creating your own applications signifigantly easier.

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William Coleman
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As always if you have any problems, questions or suggestions about this or any of my articles, or have a question about Geos in general, please don't hesitate to leave me EMail on Genie (my address is WC.COLEMAN) or send me regular mail to the above address. Happy 'puting.

William Coleman (aka Master Blaster) has written numerous public domain and commercial Geos programs. He is a Sysop in the Commodore section of the GE Information network (GENIE) and lives in Green Cove Springs, FL with his wife and two children (and yes his kids are turning into computer potatoes too)!.

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Experiences with geoPublish revisited

Putting out a newsletter with geoPublish can sometimes be trying.

By Mike Hughes

It has been a while since I've written about some problems I have had with geoPublish. It is my understanding that the famous "ripple problem" (I've become so accustomed to), has been solved! I found this out by accident. I had called BSW to speak with one of the engineers about it, and as I described the problem, he said that it has been fixed. I understand that the fixed version is going to be sent to only those who have had this problem. It seems to just occur when creating documents of over 15 pages, which is what I do with every issue of "The Apostolic Messenger" that I publish. Anyway, I am thankful that one annoying difficulty is solved.

There still are some other problems that I've been having with geoPublish. First, let me say that the program does a lot, considering it is being run on a Commodore 64! Rumor has it that a 128 version of geoPublish is in the making.

I also experience what I have termed the "old grouchy editor" problem. Since The Apostolic Messenger has at least eleven articles an issue (with 1500 words per article), the typist, (yours truly), is subject to making mistakes! Since mistakes are inevitable when typing this many articles I send a rough draft of the magazine to the editor, who in turn proofreads and sends me the copy to make corrections. I load geoPublish and the disk that contains the magazine on it, and go to the page layout mode, using the trusty editor to correct the mistakes. All is well until I go back to the magazine. The articles do not re-ripple and the corrections cause part of (if not all) the article to disappear. The first time I saw this I thought the magician, David Copperfield had invaded my computer! The only solution I have found so far is to cut the affected columns and reinsert the article.

Another problem, which I believe is a cousin to the "grouchy editor", has to do with placing "pull quotes" in boxes. Pull quotes are areas where you set up (in Page Layout mode), a region of, say 4" of space and then go to Page Graphics mode, chosing a line of text and placing it in about 18 point bold type. Pull quotes are good for catching the reader's eye and enticing him to read further. If, in page layout mode, I happen to select this area from within a paragraph, I'm in trouble! GeoPublish will leave out a page of the article and start just anywhere below the pull quote. The only solution is to cut the affected column out and place the article back in.

> "Pull quotes are good for catching the reader's eye and enticing him to read further."

While speaking of problems I've encountered, let me speak about one of the most irritating. It is the way the new version of geoWrite 2.1 works. The version that comes with GEOS 2.0 has a selection under *options* called "make full page wide". I found out the hard way that this should be selected prior to any typing of text, or a whole issue of the magazine will be ruined. Even though this is a later version of geoWrite 2.1than the one I had been using, I have now chosen to go back to the older 2.1 version.

One thing I would like to see BSW do (if they are behind the Commodore 1581 drive as much as Brian Dougherty says they are), is to come out with GEOS for the 64 and 128 on a 3 1/2 inch disk. I was almost persuaded to buy a 1581 until I learned there is no planned boot disk for this drive. Come on Berkeley Softworks, help us out!

Berkeley Softworks is a good company, all things considered. I believe they have given the Commodore 64 (and C-128) new and extended life by introducing GEOS and its applications. Let us hope that improvements will continue to be made to their products. I would like to urge all Commodore owners to support Berkeley Softworks and their fine products.

--Mike Hughes
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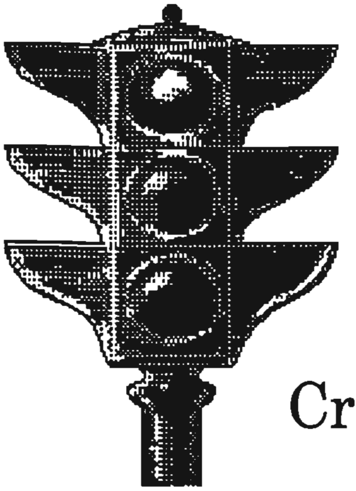

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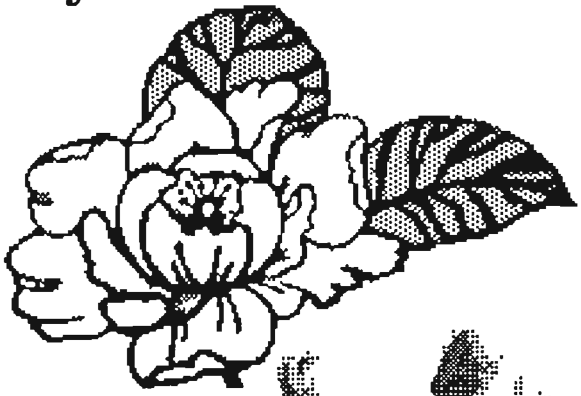

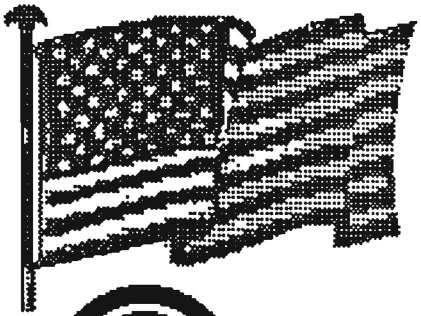

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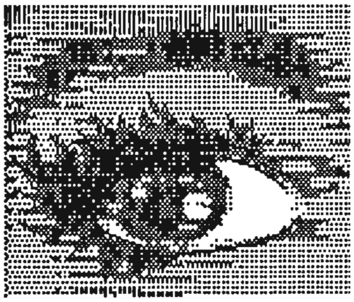

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